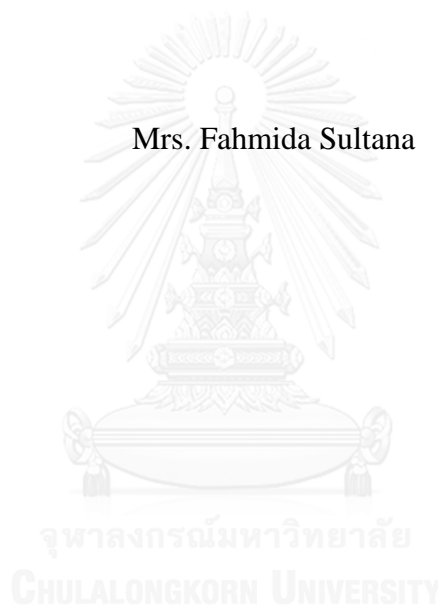


Factors Associated with the Functional Drink Consumption of Bangkok
Residents, Thailand

Mrs. Fahmida Sultana



บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)
เป็นแฟ้มข้อมูลของนิสิตเจ้าของวิทยานิพนธ์ ที่ส่งผ่านทางบัณฑิตวิทยาลัย

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A Thesis Submitted in Partial Fulfillment of the Requirements
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ปัจจัยที่มีความสัมพันธ์กับการบริโภคเครื่องดื่มฟังก์ชันของผู้อยู่อาศัยในกรุงเทพมหานคร ประเทศไทย



วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิทยาศาสตรมหาบัณฑิต
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CHULALONGKORN UNIVERSITY

พามิดา ซัลทานา : ปัจจัยที่มีความสัมพันธ์กับการบริโภคเครื่องดื่มฟังก์ชันของผู้อยู่อาศัย
ในกรุงเทพมหานคร ประเทศไทย (Factors Associated with the Functional Drink
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เครื่องดื่มฟังก์ชันเป็นส่วนหนึ่งของผลิตภัณฑ์อาหารเพื่อสุขภาพ (อาหารฟังก์ชัน) ซึ่งเมื่อ
บริโภคเข้าไปแล้วทำให้เกิดประโยชน์บางอย่างต่อร่างกายเชิงสุขภาพ ส่วนผสมส่วนใหญ่ของ
เครื่องดื่มฟังก์ชันประกอบด้วย น้ำตาลฟรุกโตส และมัลติทอล ซึ่งเป็นสารให้ความหวาน
ส่วนประกอบทั้งสองเป็นแหล่งคาร์โบไฮเดรตที่สำคัญ แต่อย่างไรก็ตามส่วนผสมทั้งสองชนิดนี้ยัง
ส่งผลในเชิงลบต่อสุขภาพสำหรับผู้บริโภคเครื่องดื่มฟังก์ชันเป็นประจำ การศึกษาครั้งนี้มี
วัตถุประสงค์เพื่อศึกษาปัจจัยที่ส่งผลต่อการบริโภคเครื่องดื่มฟังก์ชันของผู้อยู่อาศัย ใน
กรุงเทพมหานคร ประเทศไทย

การศึกษานี้ใช้วิธีการสำรวจแบบภาคตัดขวางในกลุ่มผู้อยู่อาศัยในเขตเมืองของ
กรุงเทพมหานคร ทั้งเพศชายและหญิง อายุระหว่าง 18 – 65 ปี แบบสอบถามได้ถูกนำมาใช้เป็น
เครื่องมือการวิจัย และวิเคราะห์ข้อมูลโดยการทดสอบไคสแควร์ และ การทดสอบ Independent
Sample T-test ผลการวิจัยพบว่า ร้อยละ 88.40 ของกลุ่มตัวอย่างที่ทำการสำรวจในครั้งนี้ เคย
บริโภคเครื่องดื่มฟังก์ชัน เพศหญิงและเพศชายมีการบริโภคเครื่องดื่มฟังก์ชันคิดเป็นร้อยละ 62.1
และ 37.8 ตามลำดับ ร้อยละ 46.8 ของกลุ่มผู้บริโภคเครื่องดื่มฟังก์ชัน ให้เหตุผลของการดื่ม
เครื่องดื่มฟังก์ชันไว้ว่า เพื่อทำให้สุขภาพดีขึ้น และร้อยละ 62.3 รายงานว่าปัจจัยที่มีความสำคัญต่อ
การเลือกบริโภคเครื่องดื่มฟังก์ชัน คือ ความน่าสนใจของโฆษณา จากการวิเคราะห์ทางสถิติพบ
ความสัมพันธ์ระหว่างการบริโภคเครื่องดื่มฟังก์ชันและระดับของความตระหนักถึงสุขภาพ และ
ความสัมพันธ์ระหว่างการบริโภคเครื่องดื่มฟังก์ชันและส่วนผสมของเครื่องดื่มฟังก์ชัน ที่ระดับ
นัยสำคัญทางสถิติน้อยกว่า 0.05

จากการศึกษาพบว่าส่วนใหญ่ของผู้อยู่อาศัยในเขตเมืองของกรุงเทพมหานครเคยดื่ม
เครื่องดื่มฟังก์ชัน ดังนั้นควรมีการรณรงค์เพื่อสร้างความตระหนักถึงการบริโภคเครื่องดื่มฟังก์ชันใน
มุมมองของเครื่องดื่มที่มีน้ำตาลเป็นส่วนประกอบ โดยการให้ความรู้ที่เกี่ยวข้องกับสุขภาพจากการ
บริโภคน้ำตาลมากเกินไปจนความจำเป็นของร่างกาย

สาขาวิชา สาธารณสุขศาสตร์

ปีการศึกษา 2559

ลายมือชื่อนิติต

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Functional drink is a prominent product category under the functional food sector. Health benefit belief from functional foods emerges as the strongest positive determinant of willingness to consume functional drink. Most common ingredients in these functional drinks are sugar, fructose and maltitol which are the source of carbohydrate. These ingredients also have some negative effects on human body if consume frequently. Thus the purpose of this cross-sectional study was to investigate the factors associated with the functional drinks consumption behaviour of Bangkok residents, Thailand.

The survey was conducted among adult of Thai nationalists for both male and female with age range of 18 to 65 years in metropolitan area of Bangkok. Structured questionnaire was used to collect data. Data were analyzed by Chi-square test and t-test. It has been observed that majority of the respondents (88.40%) consumed functional drinks at least once in a life. The percentage of consumption of functional drink was higher for female (62.2%) than male (37.8%) among who consumed functional drinks once in a life. As a reason to choose any kind of functional drinks, 46.8% of the respondents mentioned “for better health”. Statistically significant association ($p < 0.05$) was found between ever consumption of functional drinks and health concern level and also between ever consumption of functional drinks and ingredients of drinks. Regarding the motivational factor, ‘Interesting Advertisement’, 62.30% respondents’ of the opinion was for ‘Important’.

Consumption of functional drinks was common among majority of the Bangkok residents. Media campaign about the sugary functional drinks would be effective for raising awareness about added sugars in functional drinks, increasing knowledge about health problems associated with excessive sugar consumption.

Field of Study: Public Health

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Student's Signature

Advisor's Signature

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CHAPTER I: INTRODUCTION

1.1 Background

Good health becomes critical to increase human well-being as it makes people get happiness, safety and self-reliance which in turn lead to sustainable economic and social development (Kay, 2007). Even there are various alternatives to provide vitality, consumers today are searching for super foods or functional foods to keep them healthy, prevent diseases and improve their mental state (S. & F., 2002).

Functional drinks is a prominent product category under the functional food sector. In the universe of food, a key area of focus today is functional beverages; the fastest growing sector of the functional food. These has range from drinks that claim to improve athletic endurance, energy, hydration and health (with the latter encompassing general wellness/immunity, bone/joint, cognitive, digestive and other areas) enhance beauty and relaxation and promote weight loss. The wide variety of functional claims appeals across demographic group; from adolescents to baby boomers. Generally, it is a non-alcoholic beverages fortified with vitamins A, C, and E or other functional ingredients (Siró, Kápolna, Kápolna, & Lugasi, 2008).

Particularly, all beverages are the most active functional food categories because of, (a) convenient and probably to meet consumers demand for container's contents, size, shape and appearance (b) easy of distribution and better storage for refrigerating and self-stable product (c) great opportunity to incorporate desirable nutrition and bioactive compounds (L. & Augustin MA, 2009) (Kausar H., Saeed S, AhmadMM, & A., 2012) In the past recent years, a greater health concern has been growing among Thai people, health and wellness food and beverages are perceived to be a better choice, to help create better immune systems and strengthen the body. New categories of functional drinks are formed; several benefits such as vitamins, minerals, collagen, fiber and omega3 were identified and combined into a new product. Labelling for claims of specific health benefit will create an expectation to the consumers prior the consumptions of the products in question (Kim & Kwak, 2015).

There are many categories of functional drinks in today's ever blossoming beverage market. Here are some examples- Relaxation Beverages, Energy Drinks, Health Drinks, Weight Management Drinks, Immunity Boosting Beverages, Digestion Aid Beverages, Alertness Enhancement Drinks, Detoxification Drinks, Sleep Aid & Joint Health Drinks.

Non-alcoholic beverage market of Thailand can be divided into various sectors. For example: carbonated drinks, fruit and vegetable juice, bottled water, functional drinks, ready-to-drink (RTD) tea and coffee, powdered concentrates and traditional Thai drinks. Growing health concerns of Thai consumers has driven growth in Green Tea, fruit and vegetable juices; cereal based drinks. Due to an expansion in the number of off- sale outlets such as convenience stores and hypermarkets, functional drinks are available to a larger portion of the population in Thailand.

In this study, the definition of functional drink has been addressed by which ingredients with an additional health value have been added to conventional drink, not in the form of pills or capsules but just as normal drink.

Now-a-days emerging adults are heavy users of many types of media including social media, smartphone applications, the internet and television. Heavy media use has been associated with many unhealthy outcomes (i.e. alcohol use, obesity) and through these media, food and beverage companies target emerging adults, especially for energy drinks or functional drink – a product with a number of negative side effects and health outcomes. Health benefit belief from functional foods emerges as the strongest positive determinant of willingness to consume functional drinks. Functional food and beverages exhibit 62.8% and 61.2%, the largest share value of Thailand health and wellness industry in 2010 and 2012 respectively (Euromonitor, 2012). People think that adding some food ingredients or vitamins in food or drink enhance health benefit beyond their basin nutrition. However, potential health benefit gains due to consumption of well-balanced and healthful diet on a regular basis at the effective levels. Different Opinions exists on functional beverages, both positive and negative ones.

Though functional beverage industry has experienced innovative and economic expansion, yet research into consumer perceptions of functional drinks and their associated health claims are limited.

Most studies have heavily looked at a general constituent of the functional foods e.g. either consumers' attitudes or perceptions regarding functional foods or food manufacturers' decision to develop functional foods. The advantage of going deeper into a sub category of functional foods; functional drinks has been to some extent overlooked. Despite increases in consumption, there are limited evidence regarding the relationship of functional drinks consumption has with lifestyle factors (Arria et al., 2010) and influence of different kind of media. Thus the purpose of this study is to examine the association of functional drinks consumption with the socio demographic factors, lifestyle factors, motivational factors among adult (18-65 years old) population in Bangkok residents, Thailand.

1.2 Research Objectives

The purpose of the study is to identify the factors influence functional drinks consumption among Bangkok residents aged between 18 to 65 years.

Specific objectives:

- 1) To assess the percent of functional drinks consumption among Bangkok residents aged between 18 to 65 years.
- 2) To investigate an association between sociodemographic factors and functional drinks consumption.
- 3) To find out the association between life style and functional drinks consumption.
- 4) To assess an association between product features and functional drinks consumption.
- 5) To investigate the association between other motivational factors* and functional drinks consumption.

* Other motivational factors (more people drink, family/friends, media, advertisement)

1.3 Research Questions

In order to achieve the study aims, the study will seek out answers for the following questions:

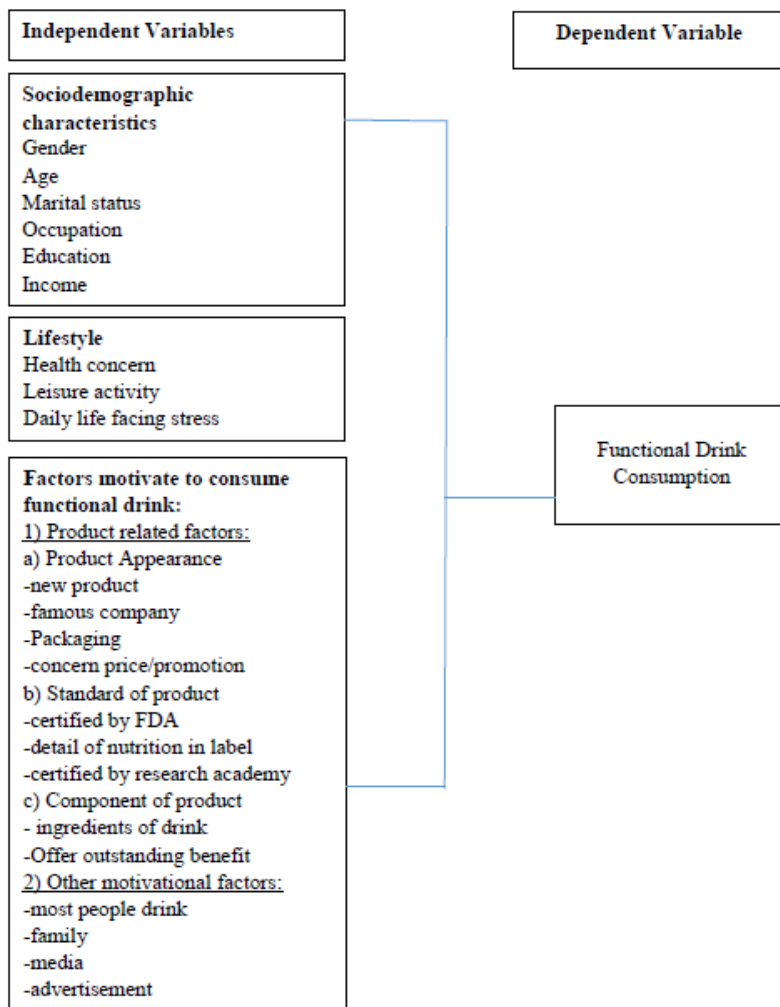
- 1) Is there any association between sociodemographic factors and functional drinks consumption?
- 2) Is there any association between life style factors and functional drinks consumption?
- 3) Is there any association between product related factors and functional drinks consumption?
- 4) Is there any association between other motivational factors* and functional drinks consumption?

1.4 Research Hypothesis

- 1) There is an association between socio-economic factors and functional drinks consumption.
- 2) There is an association between life style factors and functional drinks consumption.
- 3) There is an association between product related factors and functional drinks consumption.
- 4) There is an association between other motivational factors* and functional drinks consumption.

* Other motivational factors (more people drink, family/friends, media, advertisement)

1.5 Conceptual Framework



1.6 Operational Definitions

Marital Status: In this study the marital status has been categorized as single, married, divorced

Income: Income has been expressed into average monthly and into six ranges.

Education: The respondent's highest level of education at the time of interview has been divided into 6 groups 1) primary 2) secondary 3) vocational 4) Bachelor 5) Master and 6) Doctor or higher.

Occupation: the respondent's occupation at the time of interview. Occupation has been divided into 3 groups which are student, company employee, government officer or state enterprise employee.

Health concern level: Health Concern is health related matter that are interest, importance or worry about health based on respondent's self-perception. In this study health concern level of respondents has been categorized into four levels (1) no (2) little (3) moderate (4) a lot.

Functional drink: Drinks' contain ingredients with an additional health value which have been added to conventional drinks; not in the form of pills/capsules but just as normal drink. In this study, few kinds of drink have been taken into consideration as sample. These are fruit juice (e.g. Malee, Tipco), Green tea or herbal tea (e.g. Oishi, Yen yen), Beauty drinks (e.g. Sappe collaskin, Sappe beautiEyes)

Functional Drink Consumption: Consumption of functional drinks means that the respondents had consumed functional drinks at least once in a life.

Types: Type means various kinds of functional drink such as fruit juice, tea, beauty drink.

Frequency: Number of times the respondent is used to drink the functional drink which can be measured in terms of daily, weekly and monthly.

Lifestyle: Lifestyle is a composition of motivations, needs, and wants and which is influenced by factors such as culture, family, reference groups, and social standard. In this study lifestyle is defined as the consciousness about health, interest about healthy drink, interest about leisure activity, stress in daily life among the respondents.

Motivational Factor: A person/thing that makes respondents to consume functional drink. In the study motivational factors have been divided into two sections. In section one product related features a) Product Appearance (new product, famous company,

Packaging, concern price/promotion), b) Standard of product (certified by FDA, detail of nutrition in label, certified by research academy), c) Component of product (ingredients of drink, offer outstanding benefit) have been mentioned as motivational factors.

In second section consists of other motivational factors which included most people drink, family, media, advertisement.



CHAPTER II: LITERATURE REVIEW

A literature review on factors influencing consumers' willingness to use functional foods and drinks is discussed in this chapter. Functional drink is a prominent product category under the functional food sector. As a functional drink is a sub category of functional foods and has been to some extent overlooked thus this section will include definitions of relevant concepts and present the most relevant previous literatures in the area of functional foods.

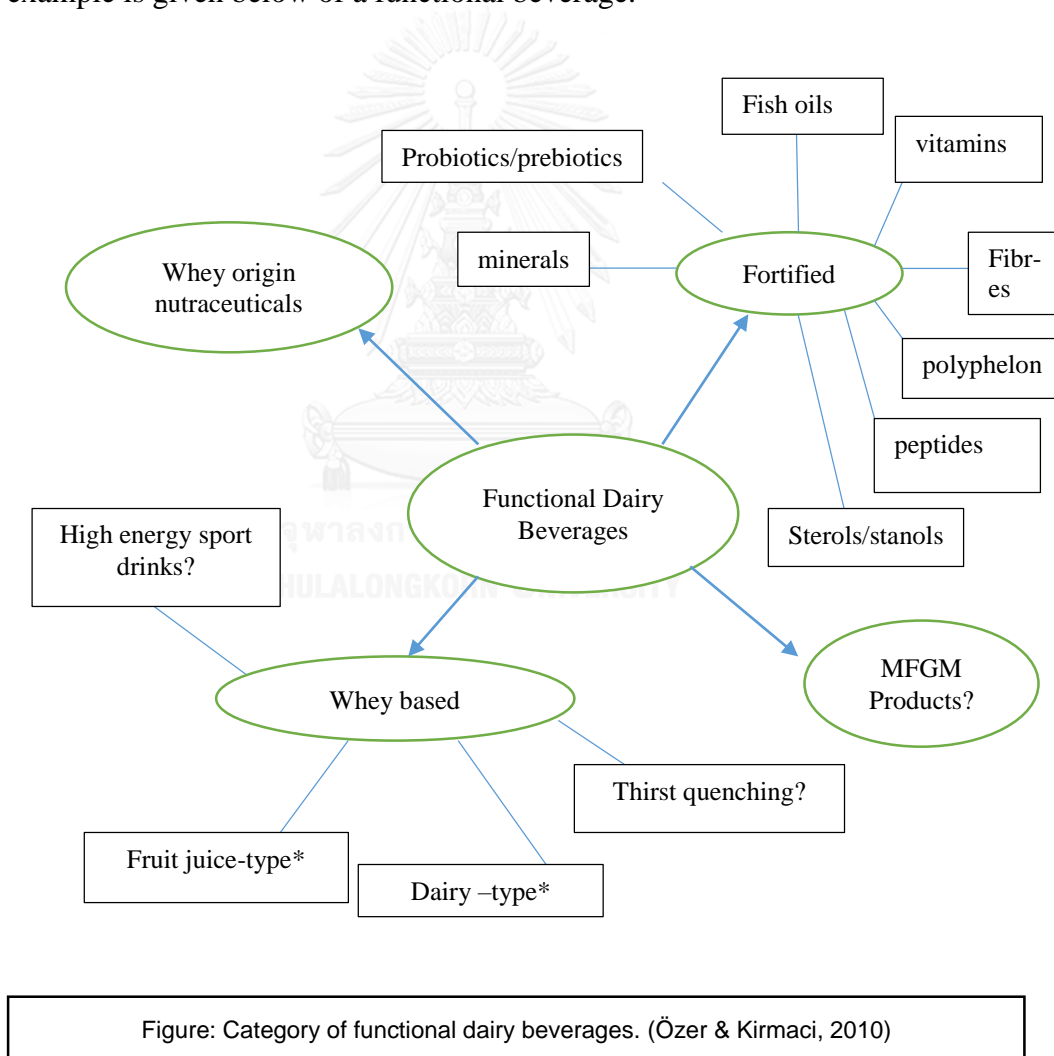
2.1 Functional Food and Functional Drink

Over the period of last decade, demand for 'healthy foods' and the beverages have been increased in many portions of the world (Ozen AE, Pons A, & JA, 2012). The primary concept of functional foods was introduced in Japan first in the middle of 1980s for food containing ingredients with the functions for health (FOSHU- food for specified health purpose) (Lau, Chan, Tan, & Kwek, 2012a). Typically, a food marketed as functional contains added technologically developed ingredients with a specific health benefit (M. Niva, 2007). There is no census definition and category of functional food and beverages. In the U.S.A, functional food is defined as 'foods and food components which provides health benefits beyond the basic nutrition' (Srafini M, Stanzione A, & S., 2012). The Institute of Medicine of the US National Academy of Sciences defines functional foods as foods that encompass potentially healthful products, including any modified food or food ingredient that may provide a health benefit beyond the nutrients it contains. In Canada- functional food is defined as 'food similarly in appearance to or may be, a conventional food which is consumed as a part of usual diet and has been demonstrated to have a physiological benefits and/or reduced the risk of chronic diseases beyond the basic nutritional function' (Lua T-C, Chan M-W., Tan H-P, & C-L, 2013). In China- "functional food means those foods that have a special health function or are able to supply vitamins or minerals for human body".

In Europe, a much narrower definition is used focusing only on foods designed to promote health or food sold for health benefits (S. & F., 2002). It should be noted that there are at least twentysix definitions of functional foods worldwide (Doyon &

Labrecque, 2008). In most countries there is no legislative definition of the functional food term and drawing a border line between conventional and functional foods is challenging even for nutrition and food experts (Mark-Herbert, 2004; M. Niva, 2007). In order to promote the health and to enhance the health span not just life span the Consumers have been looking the ways. 93% of the consumers in North America believe that the health benefits exist for certain foods which may reduce the risk of diseases (Özer & Kirmaci, 2010). For the spread of international tastes and a drive to create a sell foods and drinks which offer consumers nutritional benefits, ingredients technologies have been improved.

An example is given below of a functional beverage.



2.1.1 Trends of Functional Drink

Consumers interest in health and wellness sector has been increased greatly. Many more consumers have been seeking food product which can provide extra health benefits for human body. Consequently, the consumer's attitude has been changed towards healthy nutrients (i.e. whole grain food, fiber food, vitamins and/or minerals) (Kim & Kwak, 2015) and the functional beverage market has grown world-wide during the last decade (Menrad & K., 2003).

Over the period of last decade demand for healthy foods and beverages have been increased in various parts of the world including the Asia-Pacific region. It is true that the health benefits from the certain food groups and super foods are well documented. Many of the Asian cultures have used plant based minerals for hundreds of years to cure ailments. But where the functional drinks category come into play, it has been dominated by the US, UK and Europe closely behind. The Asia Pacific, however, has been lagging behind when it comes to this category, but has now become one of the fastest growing market for fortified-functional (FF) drinks with a demand from China and Japan acting as a driving force behind this. According to Euro monitor the fortified-functional beverage market in China has a growth rate of 13% in value in 2014 to US\$14bn with a compound annual growth rate (CAGR) of 9% predicted for the forecast period until 2019. Hong Kong has been experienced a growth rate of 6% to reach US\$167MM in 2014, the trends are expected to boost exponentially in the coming years, as the Asian functional beverage market grows.

Currently, alcoholic beverage sector has been facing with many rules and restrictions such as excise taxes, government policies, and public criticizing in Thailand. These have driven many Thai beverage companies to expand their product line into nonalcoholic beverage sector. As a result; a rapid growth of non-alcoholic beverages, from Table A, the total market value of this sector is greater than 100 billion baht. By comparing the growth between 2010 and 2011, in 2011, the market growth in some categories may returned negative, however, the reason for these negative figures were mainly attributable to the flood situation in the fourth quarter of the year. It is seen in the following Table A, functional drinks is the only category that showed an exceptionally growth rate of 79 percent in the year 2010 in Thailand.

Table A: Market Growths and Value of Non-alcoholic in Thailand 2010 and 2011

Drink Category	2010 (%)	2011 (%)	Market value (Million Baht)
Ready to drink milk	8	6	40,000
Soft Drinks	8	-4	36,000
Energy driks	8	6	16,000
Bottled Water	23	3	9,000
Fruit/vegetable juice	14	1	8,500
RTD Coffee	6	5	8,500
RTD Tea	25	17	8,000
Functional drinks	79	-6	4,200
Sports Drinks	23	-7	3,000
Soy Beverages	4	17	2,000

Source: A.C. Neilson Estimator of Non-Alcohol growth rate in Thailand (2012)

2.2 Ingredients of Functional Drinks and its Effects on Health

Beverages remain the first choice for 'grab-and-go' foods among consumers. Functional drinks are non-alcoholic drinks which keeps one's body hydrated and provide nutritional well-being. These are fortified drinks that prevent or help to address health issues across all age groups. The fortification could be from ingredients; for example, herbs, vitamins, minerals, and amino acids to additional raw fruits and vegetables. These functional drinks can be segmented based on type into energy drinks, sports drinks, nutraceutical drinks, dairy-based beverages, juices, enhanced water and others. Another segmentation based on the ingredients used can be as follows: antioxidants, minerals, amino acids, prebiotics, probiotics, vitamins, super fruit extracts and botanicals.

According to a report consumers have been making a great effort to include the certain elements and items in their everyday diets, such as vitamins-78%, herbs/botanicals-45% and minerals- 42%, as well as products with specialty of nutritional ingredients-57% (Sloan, 2000).

Fruit/vegetable drinks:

Anti-stress and relax functional fruit/vegetable drinks which contain fruit or vegetable juice 12% (in Thailand), carbohydrate (sugar), carnitine and the selling points of these drinks are refreshment, relax, and healthiness.

Green tea or herbal drink:

Green tea or herbal drink from both Thai and Chinese herb which contain fructose 5%, sugar 4.5% (in Thailand). Selling points are prevent and reduce aphthous ulcer and digestive tract symptoms; mouth sore, rotten lip, rotten tongue, sore throat, hoarse, thirsty, cough, eye burns which happen from unbalance life such as sleepless, eat too much fried stuff, dehydrate and digestive symptoms.

Beauty drinks (for skin)

Beauty drinks (for skin) which is getting more and more popular among Thai female consumers which contains collagen concentrated grape juice 10%, collagen 0.62%, carbohydrate (sugar and molitol) Vitamin C 0.011%, Vitamin E 0.0018%. The selling point is the collagen which is protein in the skin that gives youthful look. The main ingredients are collagen and coenzyme Q10.

Beauty drink (for eye)

Another functional drink available in Thailand is beauty drink, functional drink for eye which contains concentrated white grape juice 10%, mix berry 5%, Gojiberry extract 0.028%, carbohydrate (sugar and molitol), Vitamin A, B, C, E 0.02%. Selling point is that it contains gojiberry juice which contains a plenty of Lutein which helps to nourish eyesight and prevent causes of macular degeneration. Vitamin A, B, B6, C and E help maintain and normalize good vision. Niacin and Folate moisten and nourish iris and retina.

Most common ingredients in these functional drinks are sugar, fructose and maltitol which are the source of carbohydrate. These ingredients have some negative effects on human body if consume frequently.

MALTITOL

Maltitol is a “sugar alcohol”. Sugar alcohols are found naturally in some fruits and vegetables. They’re also considered carbohydrates.

Sugar alcohols are typically manufactured rather than being used in their natural form. They’re sweet, but not quite as sweet as sugar, and have almost half the calories. They are usually used in baked goods, candy, and other sweet items. They can also be found in some medications. Besides adding sweetness in place of sugar, maltitol and other sugar alcohols help keep food moist, and help prevent browning. It is sometime listed as sorbitol or xylitol or just as sugar alcohol, since it falls under this category.

Maltitol allows one’s to get a sweetness that is close to that of sugar, but with not as many calories. For this reason, it can help with weight loss. It also does not have the unpleasant aftertaste that other sugar substitutes tend to have. This can help someone to stick to a lower calorie diet if he/she are trying to lose weight or manage diabetes.

Another benefit is that maltitol, and other sugar alcohols, do not cause cavities or tooth decay like sugar and other sweeteners do. This is one reason they are sometimes used in gum, mouthwash, and toothpaste.

Maltitol is considered a safe alternative to sugar, but there are some precautions everybody should be aware of. Maltitol is found in many sugar-free products, but people with diabetes should remember that it is a carbohydrate. This means that it still has a glycemic index. While not as high as sugar, it still has an effect on blood glucose. It is important to note that body does not absorb as much sugar alcohol as sugar. So it can still be used as an effective alternative for people with diabetes. They just need to monitor their intake of it and read labels.

After eating maltitol, some people experience stomach pains and gas. It also can act similarly to a laxative and cause diarrhea. The severity of these side effects depends on how much of it one eat and how one’s body reacts to it.

They are considered by some to be neither digested, absorbed nor metabolized to the same extent as sucrose, and thus provide less energy per unit mass to the consumer (FR, 1994). However, this view is currently the subject of controversy (Ruskoné-Fourmestraux et al., 2003).

A Ruskoné-Fourmestraux et al (2003) demonstrated that, compared to reactions which occur after the consumption of standard sucrose containing chocolate, occasional or

regular consumption of increasing doses of maltitol is not associated with significant digestive symptoms, but results in an increase in diarrhea.

In countries such as Australia, Canada, Norway, Mexico and New Zealand, maltitol carries a mandatory warning such as "Excessive consumption may have a laxative effect." In the United States, it is generally recognized as safe (GRAS) substance, with a recommendation of a warning about its laxative potential when consumed at levels above 100 grams per day.

FRUCTOSE

Fructose is a natural sugar which is found in many fruits, fructose is consumed in significant amounts in Western foods (Miller & Adeli, 2008). It is sweeter than glucose or sucrose for the equal amount and is therefore, commonly used as a bulk sweetener. An increase in high level fructose corn syrup, as well as total fructose, consumptions over the period of past ten to twenty years have been linked to the rise in obesity and metabolic disorder (GA, SJ, & BM, 2004). This raises concern about the short and long term effects of fructose in human body. Fructose has been claimed of concern due to several factors-first in 1980s, sucrose was replaced to a large extent, particularly in North America, by high fructose corn syrup in carbonated beverages. The intake of soft drinks, containing HFCS, has risen in parallel with the epidemic of obesity (G, 2007). Second dietary fructose has been implicated in the risk factors for cardiovascular disease: i) Plasma triglycerides and VLDL-TG have increased following the ingestion of large quantities of fructose; ii) Fructose intake has been found to predict LDL particle size in overweight school children (I, MB, & L, 2007) ; & iii) A positive relationship has been demonstrated among fructose intake and uric acid levels (Nakagawa et al., 2006). Third, the use of fructose as a sweetener has been increased. The third National Health Examination Survey demonstrated that over 10% of Americans daily calories was from fructose. These studies suggest that the relationship between fructose and health need re-evaluation (Vos, Kimmons, Gillespie, Welsh, & Blanck, 2008).

Common ingredient which is found in functional beverages in Thailand is fructose. Fructose is virtually identical to alcohol regarding the metabolic havoc it wreaks. When someone consumes fructose, hundred percent of it directly goes to the liver to be metabolized and this is why it can be extremely hepatotoxic when it overloads the liver-

just like alcohol. The metabolism of fructose causes most of the same toxic effects as ethanol such as visceral adiposity i. e., belly fat, insulin resistance and metabolic syndrome, but when consumed excessively fructose may actually be more damaging to health, having more than 70 documented adverse effects. Fructose buzzes brain like other narcotics, displaying both dopaminergic and opioid properties which may be the reason people find themselves consuming such large amounts even while it is reducing both the quality and also length of their lives.

It is important to limit the intake of fructose carefully, just like intake of alcohol, an appropriate amount of fructose which is no more than 25 grams per day, but if one is overweight, having heart disease or at risk of heart disease, cancer, or type 2 diabetes, then he or she probably better off cutting that may down to 10-15grams a day.

Fructose is one of the most abundant sugars in functional fruit juice. Some people believe fructose is healthier than sucrose because it is found naturally in fruit but it can be equally harmful (Serpen, 2012). Excessive amounts of fructose consumption has negative health effects (Gaby, 2005). The study reported in (Gaby, 2005) reached a number of conclusions as follows. Fructose is likely a primary cause of symptoms in certain patients with functional bowel disturbances. The ever-increasing occurrence of obesity, diabetes mellitus and non-alcoholic fatty liver disease could be the result of excessive fructose intake as well. In the long run, fructose may promote the formation of toxic advanced glycation-end products, which may contribute to diabetes, the aging process, and the thickening of artery walls (Gaby, 2005).

SUGAR

During the past 30 years, there has been a marked increase in the consumption of sugar sweetened beverages (SSB) across the globe. For instance, in the United States, intake of these beverage; which includes the full range of soft drinks, fruit drinks, energy drinks, and vitamin water drinks, increased from 3.9% of calories in the late 1970s to 9.2% in 2001; representing a three-fold increase in intake (Nielsen & Popkin, 2004).

In other countries, there have been varying levels of increase in SSBs, with some countries such as Mexico reaching such magnitudes that serious government intervention to reduce intake is being undertaken (Rivera JA et al., 2008). Nation-level

food disappearance data from China, India, Vietnam, Thailand, and other South Asian countries also show rapid trajectories of an increase in SSB intake, as well as large per capita consumption across the Americas, Germany, Australia, Spain, and Great Britain (Ismail AI, Tanzer JM, & JL., 1997).

In a longitudinal study Fung et al (2009) found that women who drink two or more servings of sweetened beverages per day may increase their risk of heart disease by 35 per cent (Rizkalla, 2010).

Somsri Tachavarakul, a dietician of Bumrungrad Hospital said that people nowadays are more hooked on sweetness than ever and the addiction has led to a myriad number of health problems, like from obesity and hypertension to heart disease. Functional drinks like beauty drinks, even ones that boast weight-loss benefits, also contain sugar. These might be promoted as healthy drinks, but the sugar in them might be as high as in other drinks. Some are fruit based, which means they have natural fructose, while some have added sugar. Beauty drinks or other functional drinks, all contain sugar, whether from fruit or from added sweetener.

Somsri suggested that fruit juices should be consumed carefully. "Some brands make their juices from concentrate, some from syrup, and some from real fruit. Even brands that claim their juices are 100% natural should be consumed with caution. When we eat two apples, they don't even taste the same, so how can hundreds of cartons of apple juice from one company taste the same? It just doesn't sound natural."

In one such study, it was suggested that daily fruit requirements could be met by consuming 100 percent fruit juice, although other studies had evaluated 100 percent fruit juice as a sweetened beverage with unhealthy consequences with regard to weight (C. E. O'Neil, T. A. Nicklas, Zanovec, & I. L. Fulgoni, 2011).

Green tea is now eyed by the Department of Health for banning after considering their high levels of hidden sugar, as per report published in "Thailand Business News", an online newspaper, on November 5, 2015 as by Olivier Languépin under the heading of "Thailand Dangerous Sugar Addiction". The deputy director-general of the Department of Health Dr Sutha Jienmaneechotchai was interviewed who stated that the Department

is considering a proposal to control green tea which has high sugar content because it is detrimental to health. It is also mentioned that the Consumer Protection Board and the Food and Drug Administration would be asked to regulate advertising promotions on soft drinks and green tea adverts because of the high sugar content is harmful to health. Practically, Thai peoples' daily sugar consumption is over four times the World Health Organisation (WHO)'s recommended level.

2.3 Factors influence consumption of functional drink

2.3.1. Socio demographic and lifestyle characteristics

Based on a review of quantitative studies in the US during 1992-1996, (Childs, 1997) identified the US functional food consumer as being female, well educated, higher income class, in a broad 35-55 age group. A more recent quantitative study by IFIC (1999) reported that women college graduates and consumers aged 45-74 are most likely to have adopted functional foods in their diets. (Hilliard, 1996) posited that purchasing of functional foods in Europe is biased towards the higher socio-economic groups, reflecting a higher willingness or ability to pay a price premium, as well as better knowledge and higher awareness. (Verbeke, 2005) pointed towards a higher probability of acceptance of functional foods among female and older consumers. Belief in the health benefits of functional foods was also found positively correlated with functional food acceptance. With respect to knowledge, an interesting negative impact on the likelihood to accept functional foods was found (Verbeke, 2005).

2.3.2 Motivation towards functional drinks and willingness to use functional drinks

Consumers' acceptance of functional foods can be explained by analyzing their motivation towards such foods, outcomes from consumption of such foods that people usually expect and people's ability in changing their diet-related behavior in the domain of consumer behavior. All these may vary depending upon consumers' demographics. Europeans are in the mode of more hesitant in consuming functional foods while US people accept functional foods without showing any hesitation and incorporate them into their diets (Verbeke, 2005). Danish consumers in Europe, for instance, are found to be sceptical and more cautious about the functional foods. They judge the same as

“unnatural and impure” for human consumption (K. Menrad & Sparke, 2006). In another study which aims to explore impression and perceived need of Swedish consumers about functional foods where similar results on negative attitudes have been found. It has been published that the necessity of functional foods are perceived only once other lifestyle changes are not able to improve for a person's health concern (Landström, Hursti, & Magnusson, 2009).

However, consumers in Finland, Europe accept functional foods more readily than their counterparts in Denmark, USA or Sweden (Bech-Larsen & Grunert, 2003; Bech-Larsen, Grunert, & Poulsen, 2001). Same results showing positive attitudes toward functional foods have also been found in Australia. Attitudes were shown significant determinants for non-users' willingness to try functional foods (O'Connor & White, 2010). Some of the consumers have shown more positive attitude towards functional foods, which may vary from country to country. There is a lack of recent studies on Thai consumers' attitudes towards consumption of functional foods or drinks.

Attitude has been representing the liking and disliking of consumers. Usually consumers used to do things what they like to do, while avoiding things what are disliked by them. There are number of types of attitudes that must be considered during analyzing consumer behavior. However, consumers' (i) belief in, (ii) feeling in, and (iii) intentions are important and play a vital role in determining consumers' willingness to use functional drinks.

Belief can be defined as the subjective judgment about the relationship between two or more things (Blackwell, Engel, & Miniard, 2001). Beliefs are based on knowledge. What consumers have learned about functional drinks to determine what they believe in the products. Many consumers think that functional drinks are not natural, because of the added nutrients, that are used to meet the claim of health benefits. As a consequence, these consumers show a strong unwillingness to accept functional drinks. (Schmidt, 2000) has reported the results of a national phone survey in which more than 95% of consumers believed certain foods have benefits that go beyond basic nutrition and may contribute to reduce disease or improve their overall health. However, even though they are aware of such health benefits; they still evaluate all other product attributes based on their perception; such as taste, naturalness, appearance, and price (Childs, 1997).

An attitude may also be formed as a result of consumer's feeling about the object of attitude. Feelings can be defined as an affective state or reaction such as the mood consumers currently are in or the feeling experienced during the consumption of product (Blackwell et al., 2001). Consumers may feel positive (e.g., feeling happy) or negative (e.g., feeling disappointed) towards functional drinks.

According to a comparative report on healthy food study in Thailand, Indonesia and Vietnam (W & S Market Research, 2015), similar trend for healthy lifestyle attitude happens for Indonesia (61.0%) and Vietnam (60.9%) particularly on work-life balance, most of Thai respondents are focusing on health care (71.5%) particularly on stress control lifestyle (83.2%).

Intentions are the subjective judgment about how consumers will behave in the future (Blackwell et al., 2001). There are many types of consumer intentions available. Purchase intentions represent what consumers of functional drinks think they will buy. Shopping intentions indicate when consumers plan on making their functional drinks purchases.

Spending intentions represent how much money consumers are willing to spend for functional drinks.

Consumption intentions represent consumers' intentions to engage in consuming a particular functional drink.

Therefore, we expect that the general attitude towards functional drinks will be related to the willingness to use functional drinks with regard to their ingredient combinations.

2.3.3 Perceived Healthiness about Functional drink

As per suggestion given by (G. Ares & Gámbaro, 2007) that functional foods are to be considered by the consumers only once products are perceived to be healthier for human body than the conventional ones. Unlike some characteristics of functional foods such as taste or texture, benefits which cannot be perceived by the consumers directly. They need to rely on the information available regarding the health effects of a product to distinguish between the functional and conventional foods (N. Urala & Lähteenmäki, 2004a).

(Bower, Saadat, & Whitten, 2003) had also discovered in their study cases that perceived benefits and thereby willingness to use any of the products are being

influenced by product information. Intention to buy functional products is being affected significantly by the Information such as product name, price, and nutritional benefit. Product information, nevertheless, are always not the crucial component for customers' acceptance of functional foods. (Lyly, Roininen, Honkapää, Poutanen, & Lähteenmäki, 2007) had found that individual attitudes and personal motivations are the major factors to determine the relevance of product information to the consumers and the effectiveness of a product. Consistently, (Shepherd, Sparks, Bellier, & Raats, 1991) had suggested that consumers attitude may be determined by the influence of product information over likelihood to purchase a product.

A study revealed that information about nutrition can affect the willingness to taste novel foods if it is concerned by consumers (McFarlane & Pliner, 1997). This can be applied to the health related motivation factors assuming willingness to use a product can increase given a specific suitable health claim which match consumers' concerns. In other words, if the consumers believe that the benefits in consuming functional foods will meet the claimed product information then their willingness to consume functional food products over conventional food products is likely to be high. Moreover, the willingness would even be higher if the consumers perceive risk from the consumption of such type of product is relatively low compared to the benefits.

Sometimes the nutritional properties of the products also have greater influence to the health benefits perceived by customers than the functional ingredients. Health benefits are not the only curtail criteria for consumers when they choose functional foods and drinks. Taste, for example, has been highlighted to be the extremely influential one (Childs, 1997; Lyly et al., 2007; H. Tuorila & A. V. Cardello, 2002; N. Urala & Lähteenmäki, 2004b) .

Consumers in Switzerland perceived the health image of a product more positively; when positive health claim were made about the product (Siegrist, Stampfli, & Kastenholz, 2008). External factors such as brand, packaging, labelling, nutritional information and health claims play a significant role in whether consumers like food products (Ares, Gimenezm, A, Deliza, & R, 2010).

2.3.4 Trustworthiness about Functional Drink

It is unlikely that people will consume functional foods and drinks when they have no knowledge about the functional foods (Mela, 1999). Information about the claimed benefits of food and drink products can increase consumption of the products (H. Tuorila & A. V. Cardello, 2002). Moreover, knowledge, the trustworthiness of information source appears also to have an important influence on foods and drinks consumption as well.

In a study (N. Urala & Lähteenmäki, 2004b) stated that the more trustworthiness for source of information the willingness of consumer will be more to try functional products. In the study, the most trustworthy sources of information were from the interview with scientist followed by documentary, seminar/conference, pharmacist and the food manufacturer including advertisement- the least trustworthy source of information on functional food.

The main information source that consumers have about functional foods and drinks is the mass media coverage in the form of advertising. According to (Schmidt, 2000), consumers named medical sources and the popular media as their primary source of information about foods and their health benefits. Consumers perceived medical sources (physicians, nutritionists, and dietitians) to be more credible and thus more influential than the news media in form of magazines, newspapers and television news (Lappalainen et al., 1998).

The issue of how health claims made on behalf of the functional drinks are substantiated scientifically and communicated in labelling; and advertising is a major issue affecting the market, and by some way the most controversial. (S. & F., 2002) also found that a large majority of their focus-group-study participants do not believe in benefits of the products claimed by manufactures. However, in fact, they still want to believe in those benefits and be motivated to purchase functional drinks. When consumers believe information sources, they are the most accepting of the messages and these messages thus influence their consuming functional foods and drinks effectively.

CHAPTER III: RESEARCH METHODOLOGY

3.1 Research design

A cross sectional study was conducted to describe the association of different factors with functional drinks consumption during May 2017.

3.2 Study Area

The study area was metropolitan of Bangkok, Thailand.

3.3 Study Population

The survey was conducted among adult of Thai nationalists for both male and female with age range of 18 years to 65 years in metropolitan area of Bangkok.

3.3.1 Inclusion criteria

- Age of the respondents was one of the criteria considered. The questions were set answered by the matured persons. Therefore, age limit for the respondents was required between 18-65 years.
- Apart from the age limit respondents were competent in terms of education and mental maturity. They were competent in communicating ability to understand the questionnaire and able to self-report. They were capable in reading and writing.
- Respondents had willingness to take part in the survey without any force.
- Respondents were Thai nationals and who have been living in Bangkok for minimum 3 (three) months.

3.3.2 Exclusion criteria

- Respondents having any kind of communication problem are avoided.
- Any person or his relatives who have been working in the company of any kind of functional drinks were avoided.

3.4 Sampling Technique

The convenience sampling methods were used for sampling to choose the study population. Convenience sampling is a type of non-probability sampling that involves the sample being drawn from that part of the population that is close to hand. The time period for sampling was one month.

3.5 Sample size

The sample of this research had been calculated by using Taro Yamane (Yamane, 1973) formula with 95% confidence level. The calculation formula of Taro Yamane is presented as follows:

$$n = \frac{N}{1 + N e^2}$$

where,

n=the sample size

N=the size of the population=8.30 million

(Source: National Statistical Office Thailand, 2010 The Population and Housing Census [http://www. popcensus.nso.go.th/en/](http://www.popcensus.nso.go.th/en/))

e= the error of 5% points

Substitute numbers in formula:

$$n = \frac{8300000}{1 + 8300000 * (0.05)^2}$$

$$n = 399.98 \approx 400$$

After calculating the sample size by substituting the numbers into the formula, the numbers of sample size became 399.98 persons. In order to obtain reliability of data, sample size was required to be increased by 10%. Then the sample size should be 440. As the survey was self-reported, there might had some incomplete questionnaire. So, 30% more sample were included in the study. Therefore, the sample size in this study was 568.

3.6 Measurement Tools

Translation and back translation of the measurement tools had been done by the persons who is fluent in writing and reading both in Thai and English languages.

Questionnaire with four parts of data categorization was used as followed:

Part 1: Sociodemographic and lifestyle factors:

Gender, age, marital status, occupation, education, income, health concern, leisure activity, daily life facing stress or not.

Part 2: Consumer behaviour to functional drinks

Ever drink, reason to choose, how much spent to buy drink, time of drinking, from where know about functional beverage etc.

Part 3: Factors motivate to consume functional drinks

(a) Product related factors:

i) Product Appearance

-new product, famous company, packaging, concern price/promotion

ii) Standard of product

-certified by FDA, detail of nutrition in label, certified by research academy

iii) Component of product

- ingredients of drink, Offer outstanding benefit

(b) Other motivational factors:

-most people drink, family or friends, media, advertisement

3.7 Validity and Reliability

For validation of the tool, the questionnaire was reviewed by three of the experts of the College of Public Health Sciences, Chulalongkorn University to ensure the validity and completeness of the questionnaire and Index of Item Objective Congruence was 0.78.

The reliability was estimated in sections 3(a) and 3(b) of the questionnaire. Draft of questionnaire was pretested at the beginning of study. 30 persons were randomly selected from area closed to university to do the questionnaire. To estimate the reliability of questionnaire Cronbach's alpha coefficient was applied. The Cronbach's alpha coefficient was 0.882

Cronbach's alpha coefficient:

$$\alpha = \frac{k}{k-1} \left[1 - \frac{\sum_{i=1}^k S_i^2}{S_T^2} \right]$$

α =reliability coefficient

$i=1,2,\dots,k$, k =number of items

S_i^2 =sample variance of the i th item

S_T^2 =sample variance of total score

3.8 Data Collection:

Having approval from Ethical consideration committee a voluntary basis survey was conducted to collect data.

The procedures of data collection were self-reported. The researcher recruited 4 assistants to conduct the field study who were well both in writing and speaking in Thai and English languages respectively. In the process of data collection, the research assistants were standardized by given training to understand the questionnaire, the way for data collection. The researcher explained the statement of the study objective, data collection tools and explained the topic of questionnaire step by step to the assistants. Then in-depth discussions were carried out between researcher and assistants. Research assistants were also advised to check the questionnaires once they are filled in by the participants. If the participants do not want to fill in particular question(s), the researcher/assistants then noted them down as missing questions for further analysis coding.

The participants were selected randomly in the public places and requested to fill the questionnaires once agreed. According to a report, around 2,00,000 people used to visit daily to a biggest shopping mall situated in Pathum Wan, Bangkok. Sixty percent among the visitors are local or domestic (Bangkok Post, 2014). It, therefore, was easy to find the required number of samples. Since the duration of sampling was one month and as per the formula, the sample was at least 440 and considering the number of research assistants, who were only three, at least 3 sample were required to collect per day.

Assistants were advised to approach the sample people about the subject clarifying them that the study will be conducted on behalf of the Chulalongkorn University. The

respondents/sample people were ensured that all the given information would be kept confidentially and data would only be used for academic purposes only. Once agreed, the respondents were requested to fill a self-administered questionnaire. The assistant researchers explained questions asked during the questionnaire filling process in Thai. The duration of each report was 15 to 20 minutes on average.

3.9 Data Analysis

The software named Statistical Package of Social Science of version 16 (SPSSv.16) used for data analysis. All analysis were considered to significance level at 0.05.

Objective	Statistical Analysis
1) To assess the percent of functional drinks consumption among Bangkok residents aged between 18 to 65 years	Descriptive statistics such as frequency, percentage, mean and standard deviation measured
2) To investigate an association between sociodemographic factors and functional drinks consumption	Chi square test was conducted to investigate the association of sociodemographic factors with functional drink consumption
3) To find out the association between life style and functional drinks consumption	Chi square test was conducted to investigate the association of lifestyle factors with functional drink consumption
4) To assess an association between product related factors and functional drinks consumption	T-test was conducted to investigate the association of each questions of product related features with functional drink consumption
5) To investigate the association between other motivational factors and functional drinks consumption	-T-test was conducted to investigate the association of each questions of other motivational factors with functional drink consumption

3.10 Ethical consideration

The thesis proposal was submitted to the Ethical Committee, Chulalongkorn University. After getting the approval from the Committee, the thesis has been proceeded according to the thesis guidelines of Chulalongkorn University. All of the given information from respondents have been kept confidentially and data from the respondents as overall will be used for academic purposes only. Ethical clearance was approved by The Research Ethics Review Committee for Research Involving Human Research Participants, Health Science Group, Chulalongkorn University by COA 116/2017.



CHAPTER IV: RESULTS

The research was a cross sectional study. The main objective of this study was to investigate the factors associated with the functional drinks consumption of Bangkok residents, Thailand. The total number of participants in this study was 568, aged between 18 to 65 years. The data were collected from public places in Pathum Wan district, Bangkok during May 2017.

The variables were presented as simple percentages, means and standard deviations etc. as appropriate to the nature of the variables. Firstly, the demographic data were described and then followed by the response of each part of the questionnaire.

4.1 Sociodemographic characteristics

The demographic characteristics are described in numbers and percentages in variables as shown in Table 1. The majority of the respondents were female (61.8%). The respondents were divided into three groups by age 18 to 33 years, 34 to 49 years and 50 to 65 years as described in table 1. About half (47.5%) of the respondents age was between 18 to 33 years and only 17.6 percent were between age 50 to 65 years. More than half (58.6%) of the respondents were single, whereas 37.2 percent were married and only 4.2 percent were divorced. Regarding respondent's occupation, most of them were company employee (36.5%) and government officer (26.9%), only 14.8% were students. Regarding respondent's education level, 42.1% said that they had bachelor degree, 19.4% had Master's degree, and 12.9% had vocational/ diploma. The majority (53.2%) had monthly income of between 10,001-30,000 baht and only 0.7 % had income more than 100,000 baht/month.

Table 1: Distribution of respondents by sociodemographic characteristics

Characteristics	Number (N=568)	Percentage (%)
Gender		
Male	217	38.2
Female	351	61.8
Age (year)		
18-33	270	47.5
34-49	198	34.9
50-65	100	17.6
Mean 36.26, S.D. 11.56		

Contd..

Characteristics	Number (N=568)	Percentage (%)
Marital Status		
Single	333	58.6
Married	211	37.2
divorced	24	4.2
Occupation		
Student (below university level)	84	14.8
	207	36.5
Company employee	153	26.9
Govt. officer/State	36	6.3
House wife	37	6.5
Trading/personal business	17	3.0
Unemployed	34	6.0
Others		
Education		
Primary/lower	36	6.3
Secondary	94	16.5
Vocational/diploma	73	12.9
Bachelor	239	42.1
Master	110	19.4
Doctoral/higher	16	2.8
Average income/month(baht)		
<5000	55	9.7
5001-10,000	87	15.3
10,001-30,000	302	53.2
30,001-50,000	88	15.5
50,001-100,000	32	5.6
Above 1000,000	4	0.7

4.2 Life Style characteristics

More than half of the respondents were moderately and only about one fourth of the respondents were lot concern about health (58.6% and 21.5% respectively). Table-2 shows that 49.3% respondents were moderately interested and only 10% are interested a lot.

More than half of respondents (54.9%) reported house work as their leisure activity. Whereas only 8.3% and 7.4% mentioned outdoor exercise and eating out as their leisure activity respectively. Majority of the respondents (56.9%) reported that they used to 'face stress everyday' in moderate level and 23.1% little stress in their daily life.

Table 2: Number and percentage of respondents by life style factors

Characteristics	Number (N=568)	Percentage (%)
Health concern level		
No	10	1.8
Little	103	18.1
Moderate	333	58.6
A lot	122	21.5
Interest about functional drink		
No	50	8.8
Little	181	31.9
Moderate	280	49.3
A lot	57	10.0
Most leisure activity		
Activity/housework	312	54.9
Sport/indoor exercise	81	14.3
Sport/outdoor exercise	47	8.3
Eating out	42	7.4
Travel to other provinces	59	10.4
Others	27	4.7
Daily life facing stress		
No	15	2.6
Little	131	23.1
Moderate	323	56.9
A lot	99	17.4

Table 3: Distribution of respondents by functional drinks consumption

Ever consumed functional drink	Number (N=568)	Percentage (%)
Yes	502	88.4
No	66	11.6

4.3 Consumption of Functional Drinks

It has been observed in the study that majority of respondents (88.4%) had consumed functional drinks at least once in a life (Table-3).

Table 4: Distribution of respondents by consumer behaviour about functional drinks

Characteristics	Number	Percentage (%)
Ever drink fruit juice (n=502)		
Yes	483	96.2
No	19	3.8
Frequency of consumption of fruit/vegetables juice (n=467)		
Everyday	18	3.9
2-3 times/week	145	31.0
once a week	110	23.6
once a month	79	16.9
less than once a month	115	24.6
Ever drink tea/herbal Drinks (n=502)		
Yes	477	95.0
No	25	5.0
Frequency of consumption of tea/herbal drinks(n=456)		
everyday	30	6.6
2-3 times/week	154	33.8
once a week	107	23.5
once a month	75	16.4
less than once a month	90	19.7
Ever drink beauty drinks (n=502)		
Yes	306	61.0
No	196	39.0
Frequency of consumption of beauty drinks (n=293)		
Everyday	12	4.1
2-3 times /week	63	21.5
Once a week	46	15.7
Once a month	53	18.1
Less than once a month	119	40.6
Reason to choose functional drinks (n=502)		
For better health	235	46.8
Media/advertisement	65	12.9
Other advised	30	6.0
Favourite flavor	138	27.5
Others (specify)	34	6.8

Contd..

Characteristics	Number	Percentage (%)
Spent for drinks (n=502)		
<20 baht	46	9.2
20-29 baht	155	30.9
30-39 baht	85	16.9
40-49 baht	62	12.4
>50 baht	154	30.6
Drinking time (n=502)		
Drink in the morning	96	19.1
Drink with meal	86	17.1
Drink when feels tired	246	49.0
others	74	14.8

4.4 Consumer Behaviour about consumption of functional drinks

Table-4 presents some findings about the consumer behaviour about consumption of functional drinks. There were three types of functional drinks studied in this study fruit/vegetables juice, green tea/herbal drink and beauty drinks. Among respondents who consumed functional drinks once in a life, 96.2% respondents consumed fruit /vegetables juice, the percentage for green tea/herbal was 95%, whereas only 61.0% respondents had ever drunk beauty drinks.

Frequency of consumption of functional drinks has been categorized into five groups :1) drink every day, 2) 2-3 times /week, 3) once a week, 4) once a month, and 5) less than once a month. The percentage of consumption for 2-3 times/per week is quite similar for both fruit/ vegetable and green tea/herbal drinks which are 31.0% and 33.8% respectively. But for beauty drink the percentage for 2-3 times/week consumption is only 21.5%. It is noted that 40.6% respondents consumed beauty drinks less than once a month, where they are only 24.6% and 19.7% for fruit /vegetables juice and green tea/herbal drinks respectively.

Majority of the respondents (46.8%) of the respondents mentioned “for better health” as the reason of drinking functional drinks. 12.9% mentioned media/advertisement as the reason of drinking. In case of spending money for consuming functional drinks 30.9% and 30.6% respondents spent 20-29 baht and more than 50 baht respectively. Majority of the respondents (49.0%) reported “drink when felt tired” as their time of drink.

Table 5: Places from where respondents usually used to buy functional drinks

Place	Number	Percentage (%)
Convenience store	423	84.3
Departmental store/supermarket	268	53.4
Grocery shop	62	12.4
Drug store	21	4.2
Beauty Center	13	2.6

Note: Respondents answered multiple

Table-5 presents the frequency and percentage about the places from where respondents usually preferred to buy functional drinks. In case of convenience store 84.3% of respondents agreed that they usually buy from there. As regard the departmental store/supermarket 53.4% respondents said that they used to buy from these type of places. Only 4.2% and 2.6% respondents said that they bought from drug store and beauty center respectively.

Table 6: Type of media from where respondents received information about functional drinks

Source of Information	Number	Percentage (%)
Television	509	89.6
Media Online	237	41.7
Advertisement board	218	38.4
Newspaper	188	33.1
Social Media	152	26.8
Magazine	149	26.2
Radio	71	12.5
Google	57	10.0
Facebook	49	8.6
Instagram	30	5.3
Never received	8	1.4

Note: Respondents answered multiple

Table-6 presents the frequency and percentage about the type of advertisement media from where respondents learned about functional drinks. As seen in the table, 89.6% learned about the functional drinks from television, next major sources of information were media online and advertisement board with 41.7% and 38.4% respectively. About one fourth (26.8%) respondents got information from social media. In case of social

media 8.6% got information from Facebook and 5.3% from Instagram. Only 1.4% said that they never heard about functional drinks from any kind of media.

Table 7: Number and percentage of respondents' opinion by Product related motivational factors for consumption of functional drinks

Characteristics	Not very important	Not important	Important	Very important
New product	48 (8.5%)	180 (31.7%)	288 (50.7%)	52 (9.2%)
Producing company famous	28 (4.9%)	147 (25.9%)	289 (50.9%)	104 (18.3%)
Beautiful and outstanding packaging	32 (5.6%)	198 (34.9%)	269 (47.4%)	69 (12.1%)
FDA (food and drug administration) certified	1 (0.2%)	14 (2.5%)	192 (33.8%)	361 (63.6%)
Detail of nutrition label	2 (0.4%)	21 (3.7%)	235 (41.4%)	310 (54.6%)
Providing academic research or certification	3 (0.5%)	33 (5.8%)	306 (53.9%)	226 (39.8%)
Ingredients of drink	4 (0.7%)	20 (3.5%)	309 (54.4%)	235 (41.4%)
Usefulness or benefit of the drink	01(0.2%)	22 (3.9%)	238 (41.9%)	307 (54.0%)
Price	4 (0.7%)	29 (5.1%)	317 (55.8%)	218 (38.4%)

Table-7 presents the frequency and percentage of the product related motivational factors for the consumption of functional drinks. There were four opinions for each factor to choose one, like (a) Not very important; (b) Not important; (c) Important; and (d) Very important. For five factors, about half of the respondents were of the opinion in favour of “Important” for each factor. Five factors are, New products (50.7%); Famous producing company (50.9%); Providing academic research or certification (53.9%); Ingredients of drink (54.4%); and Price (55.8%). Regarding the ‘details of nutrition label’ factor and ‘usefulness/benefit of drinks’ factor for “product related

motivational factors- 310 (54.6%) and 307 (54.0%) of the respondents were of the opinion of “Very important” for each. It is noted that in the event of ‘FDA certification’ 63.6% respondents said that it is “very important” motivational factor to consume functional drinks. Regarding ‘new product’, only 9.2% mentioned it as “very important” motivator and similarly, for beautiful packaging, the percentage was very low (12.1%). The table-6 also showed that the percentage of “not important” was less than one percent for most of the product related motivational factors.

Table 8: Number and percentage of respondents’ opinion by other motivational factors for consumption of functional drink

Characteristics	Not very important	Not important	Important	Very important
Majority of people drink	36 (6.3%)	223 (39.3%)	248 (43.7%)	61 (10.7%)
Family/friends introduce	36 (6.3%)	180 (31.7%)	296 (52.1%)	56 (9.9%)
Social media such as Facebook, Instagram, google plus, line et.	54 (9.5%)	252 (44.4%)	206 (36.3%)	56 (9.9%)
Interesting advertisement	30 (5.3%)	108 (19.0%)	354 (62.3%)	76 (13.4%)
To take care health	8 (1.4%)	33 (5.8%)	279 (49.1%)	248 (43.7%)
To make skin whitening and sun protection	35 (6.2%)	121(21.3%)	243 (42.8%)	169 (29.8%)
To take care brain	12 (2.1%)	40 (7.0%)	241 (42.4%)	275 (48.4%)
To release stress	16 (2.8%)	53 (9.3%)	300 (52.8%)	199 (35.0%)
To help digestion system	18 (3.2%)	65 (11.4%)	299 (52.6%)	186 (32.7%)
To control weight	21 (3.7%)	117 (20.6%)	269 (47.4%)	161 (28.3%)

Table-8 presents the frequency and percentage of other motivational factors for consumption of functional drinks. There were four opinions for each factor to choose one, like (a) Not very important; (b) Not important; (c) Important; and (d) Very important. In case of ‘majority of people drink’, 43.7% thought it is ‘important’, only

10.7% said it is 'Very important', while 39.3% respondents opinion were of the opinion of 'not important'. About half of the respondents (49.1%) opinion were of the opinion in favour of 'important' in case of 'to take care health'. 52.8%, 52.6% & 47.4% respondents' opinion were for 'Important' in case of factors, 'to take care health, 'to help digestion system', 'to control weight', respectively. About 'interesting advertisement' of functional drinks, 62.3% said it is 'Important'. For factor 'introduce by family/friends' 52.1% said it is important, whereas the percentage were very low for 'not very important' (6.3%) and 'very important' (9.9%). In case of 'social media' as a motivational factor more than two-fifth of respondents (44.4%) were of the opinion for 'not important' whereas for 'important' it was only 36.3%. The factor 'take care of brain' was quite important motivational factor. 42.4% and 48.4% respondents sais these are "Important" and 'Very important 'respectively. It is also noted that for all the motivational factors in table-7 the percentages were very low for opinion 'Not very important'.

Table 9: Association between the sociodemographic characteristics and ever consumption of functional drinks by respondents

Characteristics	Ever Consumed Functional drinks		Chi-square/ T-test	p-value
	Yes	No		
	502 (88.4%)	66 (11.6%)		
Gender				
Male	190 (37.8%)	27 (40.9%)	0.231 ^a	0.630
Female	312 (62.2%)	39 (59.1%)		
Age	Mean (\pm SD) 36.31 (\pm 11.58)	Mean (\pm SD) 35.80 (\pm 11.49)	0.338 ^b	0.736
Marital status				
Single	295 (58.8%)	38 (57.6%)	0.622 ^a	0.733
Married	187 (37.2%)	24 (36.4%)		
Divorced	20 (4.0%)	4 (6.1%)		
Occupation				
Student	75 (14.9%)	9 (13.6%)	5.008 ^a	0.286
Private/Government	321 (63.9%)	39 (59.1%)		
Employee	47 (9.4%)	6 (9.1%)		
House wife/unemployed	33 (6.6%)	4 (6.1%)		
Personal business	26 (5.2%)	8 (12.1%)		

Contd...

Characteristics	Ever Consumed Functional drinks		Chi-square/ T-test	p-value
	Yes 502 (88.4%)	No 66 (11.6%)		
Education				
Primary or Lower	32 (6.4%)	4 (6.0%)	5.112 ^a	0.276
Secondary	82 (16.3%)	12 (18.2%)		
Vocational/ Diploma	61 (12.2%)	12 (18.2%)		
Bachelor	219 (43.6%)	20 (30.3%)		
Master or Higher	108 (21.5%)	18 (27.3%)		
Income (Thai Baht)				
<5000	47 (9.4%)	8 (12.1%)	4.196 ^a	0.380
5001-10,000	81 (16.1%)	6 (9.1%)		
10,001-30,000	263 (52.4%)	39 (59.1%)		
30,001-50,000	77 (15.3%)	11 (16.7%)		
50,001 and above	34 (6.8%)	2 (3.0%)		

Note: a-Chi-square test, b-Independent Sample T-test

4.5 Association of functional drinks consumption with socio demographic characteristics of respondents

Chi square test was conducted to find out the association between the socio-demographic characteristics and ever consumption of functional drinks, which is presented by Table-9.

In case of association of gender with ever consumption of functional drinks, the percentage was higher for female (62.2%) than male (37.8%) among who consumed functional drinks once in a life. There was no association between gender and ever consumption of functional drinks (p-value=0.630). The mean age for respondents who consumed functional drink once in a life and never consumed were quite similar. Those were 36.31 (\pm 11.58) and 35.80 (\pm 11.49) respectively. However, no association was found between age and ever consumption of functional drink (p-value=0.736). For study purpose, marital status was categorized into 3 groups: single, married and divorced. Regarding the marital status, the percentage was highest for single (58.8%) comparing to married (37.2%) and divorced (4.0%) among who consumed functional drinks once in a life and trend was similar for those who never consumed. But the

association between marital status and ever consumption of functional drinks was not statistically significant (p -value=0.733).

Regarding the association with occupation, 63.9% was private/government employee and only was 14.9% students, 9.4% was housewife/unemployed among who consumed functional drinks once in a life. For those who never consumed, the percentage was also highest for private/government employee. No association was found between occupation and ever consumption of functional drinks (p -value=0.286).

As it can be seen in Table-8 the percentage was highest for bachelor degree holders (43.6%) compare to 21.5% masters/higher degree, 16.3% secondary, 12.1% diploma/vocation and only 6.4% primary passed respondents among who consumed functional drinks once in a life. But only 30.3% was bachelor degree holder among who never consumed functional drinks. It was also noted that the percentage of consumption once in a life (12.1%) was lower than never consumption (18.2%) among vocational diploma holder. There was no association between ever consumption of functional drinks and education (p -value 0.276 > p -value 0.05).

In concern of association of income with ever consumption of functional drinks, most of the respondents' (52.4%) income was between 10,001 to 31,000 baht and the percentage was lowest (6.8%) for income 50,001 and above among who consumed functional drinks. As expected the percentage among non-consumption was higher (12.1%) than ever consumption (9.4%) whom income were less than 5000 baht. The association was not statistically significant (p value=0.380).

Table 10: Association between the life style characteristics and ever consumption of functional drinks by respondents

Characteristics	Ever Consumed Functional drinks		Chi-square	p-value
	Yes 502 (88.4%)	No 66 (11.6%)		
Health concern level				
No	6 (1.2%)	4 (6.0%)	11.657	0.009*
Little	86 (17.1%)	17 (25.8%)		
Moderate	301 (60.0%)	32 (48.5%)		
A lot	109 (21.7%)	13 (19.7%)		
Interest level about functional drink				
No	36 (7.2%)	14 (21.2%)	21.793	0.000*
Little	154 (30.6%)	27 (40.9%)		
Moderate	257 (51.2%)	23 (34.9%)		
A lot	55 (11.0%)	2 (3.0%)		
Most leisure activity				
Housework	275 (54.8%)	37 (56.1%)	0.904	0.970
Sport/indoor exercise	71 (14.0%)	10 (15.1%)		
Sport/outdoor exercise	43 (8.6%)	4 (6.1%)		
Eating out	38 (7.6%)	4 (6.1%)		
Travel to other provinces	51 (10.2%)	8 (12.1%)		
Others	2.4 (4.8%)	3 (4.5%)		
Daily life facing stress				
No	12 (2.4%)	3 (4.5%)	6.890	0.075
Little	111 (22.1%)	20 (30.3%)		
Moderate	285 (56.8%)	38 (57.6%)		
A lot	94 (18.7%)	5 (7.6%)		

* p-value <0.05

4.6 Association of functional drinks consumption with life style characteristics of respondents

To find out the association between life style characteristics and ever consumption of functional drinks chi-square test was conducted (Table-10). In case of association with health concern level, 60.0% respondents who consumed functional drinks once in a life were moderately concern about health where as 21.7% concern a lot, 17.1% concern little and only 1.2% not concern about health. Among the respondents who never consumed functional drinks, about half of them (48.5%) were moderately concern about

health. The association of health concern level with ever consumption of functional drinks was statistically significant (p -value=0.009).

Association of interest about the functional drinks with ever consumed functional drinks was statistically significant (p -value=0.000). Among the respondents who consumed functional drinks one in a life, majority (51.2%) of them were moderately interested about functional drinks, 11.0% was interested 'a lot' and 30.6% was little interested. The percentage for 'not interested about functional drinks' was higher (21.2%) among respondents who never consumed functional drinks than among who consumed once in a life (7.2%).

More than half of the respondents' (54.8%) leisure activity was housework regarding the association of leisure activity, among who ever consumed functional drinks. The percentage was also highest (56.1%) among who never consumed functional drinks and their leisure activity was house work. Other percentages were quite similar for both ever consumed and never consumed functional drinks in their life. The association of leisure activity and ever consumed functional was not statistically significant (p -value=0.970).

In case of association of daily life facing stress with ever consumed functional drinks, the percentage was highest (56.8%) for moderately facing stress comparing to 22.1% facing little stress and 18.7% facing a lot stress among who consumed functional drinks one in a life. It was noted that among respondents who consumed functional drinks once in a life the percentage for daily life facing stress 'a lot' was higher (18.7%) than who never consumed (7.6%). There was no significant association (p -value=0.075).

Table 11: Product related motivational factors and consumption of functional drinks by respondents

Characteristics	Ever consumed Functional drink		T-test	p-value
	Yes	No		
	Mean (±SD)	Mean (±SD)		
New product	2.61 ±0.76	2.61 ±0.82	-0.005	0.996
Producing company famous	2.82 ±0.78	2.85 ±0.81	-0.252	0.801
Beautiful and outstanding packaging	2.65 ±0.76	2.74 ±0.77	-0.932	0.352
FDA (food and drug administration) certified	3.61 ±0.54	3.62 ±0.60	-0.218	0.827
Detail of nutrition label	3.50 ±0.58	3.53 ±0.66	-0.419	0.675
Providing academic research or certification	3.33 ±0.60	3.33 ±0.69	-0.058	0.953
Ingredients of drink	3.39 ±0.58	3.17 ±0.62	2.769	0.007*
Usefulness or benefit of the drink	3.50 ±0.58	3.50 ±0.61	-0.026	0.979
Price	3.32 ±0.60	3.30 ±0.58	0.224	0.823
Total score of product related factors	28.71 ±3.48	28.65 ±3.96	0.146	0.884

*p-value<0.05

4.7 Product related motivational factors and consumption of functional drinks by respondents

Table-11 presents the effect of some product related factors to consumption of functional drinks. The mean score for the factor 'new product' who consumed functional drinks once in a life and never consumed were 2.61 (SD±0.76) and 2.61

(SD±0.82) respectively, however statistically significant difference was not achieved (p-value= 0.996).

For the factor 'producing company famous' the mean scores were 2.83 (SD± 0.78) and 2.85 (SD± 0.81) for who consumed functional drinks once in a life and never consumed respectively. There was no association (p-value=0.80) between 'producing company famous' and consumption behaviour.

In case of 'beautiful & outstanding packaging' who consumed functional drinks once in a life and never consumed, the mean scores were 2.65(SD±0.76) and 2.74 (SD±0.77) respectively, however statistically significant difference was not obtained (p-value= 0.352).

There was no significant difference between attitude regarding FDA and ever consumed functional drinks (p-value=0.872). There was not much difference between the mean scores, those were 3.61 (SD± 0.54) and 3.62 (SD± 0.60) for who consumed functional drinks once in a life and never consumed respectively.

The mean score for the factor 'detail of nutrition label' who consumed functional drinks once in a life and never consumed were 3.50 (SD±0.58) and 3.53 (SD±0.66) respectively, however statistically significant difference was not achieved (p-value= 0.675).

Association was not significant (p-value=0.953) between attitude regarding 'providing academic research/certificate' and ever consumption of functional drinks. The mean scores for the factor were 3.33 (SD± 0.60) and 3.33 (SD± 0.69) for who consumed functional drinks once in a life and never consumed respectively.

Statistically significant difference was found between the attitude regarding the 'ingredients of drinks' and ever consumption of functional drinks (p-value= 0.007). The mean score for the factor who consumed functional drinks once in a life was higher (3.39, SD±0.58) than the mean score for who never consumed (3.17, SD±0.62).

For the factor 'benefit of drinks' mean scores were 3.50 (SD± 0.58) and 3.50 (SD± 0.61) for who consumed functional drinks once in a life and never consumed

respectively, though no difference was found between them (p -value=0.979). In case of the factor 'price', there was not much difference between mean scores. The mean scores were 3.32 (SD±0.60 and 3.30 (SD±0.58) for who consumed functional drinks once in a life and never consumed respectively, and statistically significant difference was not achieved (p -value= 0.823).

The mean scores for the 'total score of product related factors' were 28.71 (SD± 3.48) and 28.65 (SD± 3.96) for who consumed functional drinks once in a life and never consumed respectively. There was no significant difference (p -value=0.884).

Table 12: Other motivational factors and consumption of functional drinks by respondents

Characteristics	Ever consumed Functional drink		T-test	p-value
	Yes	No		
	Mean (±SD)	Mean (±SD)		
Majority of people drink	2.58 ±0.76	2.27 ±0.83	-0.717	0.474
Family/friends introduce	2.65 ±0.74	2.68 ±0.79	-0.313	0.755
Social media such as Facebook, Instagram, google plus, line et.	2.45 ±0.79	2.55 ±0.83	-0.873	0.383
Interesting advertisement	2.84 ±0.70	2.79 ±0.83	0.607	0.544
To take care health	3.37 ±0.66	3.21 ±0.62	1.911	0.059
To make skin whitening and sun protection	2.96 ±0.09	2.98 ±0.73	-0.271	0.787
To take care brain	3.38 ±0.70	3.32 ±0.77	-0.650	0.516
To release stress	3.21 ±0.72	3.11 ±0.70	1.138	0.256

Contd...

Characteristics	Ever consumed Functional drink		T-test	p-value
	Yes	No		
	Mean (±SD)	Mean (±SD)		
To help digestion system	3.16 ±0.74	3.09 ±0.76	0.686	0.493
To control weight	3.00 ±0.8078	3.05 ±0.7323	-0.453	0.651
Total score of other motivational factors	29.60 ±4.85	29.42 ±5.20	0.280	0.780

4.8 Other motivational factors and consumption of functional drinks by respondents

Table-12 presents the effect of some other factors that motivate to consume functional drinks. The mean score for the factor ‘majority of people drink’ who consumed functional drinks once in a life and never consumed were 2.58 (SD±0.76) and 2.27 (SD±0.83) respectively, however statistically significant difference was not achieved (p-value= 0.474).

For the factor ‘family/friends introduced’ the mean scores were 2.65 (SD± 0.74) and 2.68 (SD± 0.79) for who consumed functional drinks once in a life and never consumed respectively. There was no significant difference (p-value=0.755).

In case of ‘social media’ who consumed functional drinks once in a life and never consumed, the mean scores were 2.45 (SD±0.79) and 2.55 (SD±0.83) respectively, however statistically significant difference was not obtained (p-value= 0.383).

There was no significant difference between attitude regarding ‘interesting advertisement’ and ever consumed functional drinks (p-value=0.544). There was not much difference between the mean scores, those were 2.84 (SD± 0.70) and 2.79 (SD± 0.83) for who consumed functional drinks once in a life and never consumed respectively.

The mean score for the factor 'to take care health' who consumed functional drinks once in a life and never consumed were 3.37 (SD±0.66) and 3.21 (SD±0.62) respectively, however statistically significant difference was not achieved (p-value=0.059).

Difference was not significant (p-value=0.787) between attitude regarding 'to protect skin/whitening' and ever consumption of functional drinks. The mean scores for the factor were 2.96 (SD± 0.09) and 2.98 (SD± 0.73) for who consumed functional drinks once in a life and never consumed respectively.

Statistically significant difference was not found between the attitude regarding the 'to take care brain' and ever consumption of functional drinks (p-value= 0.516). The mean score for the factor who consumed functional drinks once in a life was 3.38 (SD±0.70) and the mean score for who never consumed was 3.32 (SD±0.77).

For the factor 'to release stress' mean scores were 3.21 (SD± 0.72) and 3.11 (SD± 0.70) for who consumed functional drinks once in a life and never consumed respectively, however no difference was found between them (p-value=0.256).

In case of the factor 'to help digestion system', there was not much difference between mean scores. The mean scores were 3.16 (SD±0.74) and 3.09 (SD±0.76) for who consumed functional drinks once in a life and never consumed respectively, and statistically significant difference was not achieved (p-value= 0.493).

The mean score for the factor 'to control weight' who consumed functional drinks once in a life and never consumed were 3.00 (SD±0.81) and 3.05 (SD±0.73) respectively, however statistically significant difference was not achieved (p-value= 0.651).

The mean scores for the 'total score of product related factors' were 29.60 (SD± 4.85) and 29.42 (SD± 5.20) for who consumed functional drinks once in a life and never consumed respectively. There was no significant difference (p-value=0.780).

CHAPTER V: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussion

In this chapter, a brief explanation of the findings and their significances to consumption of functional drinks will be presented with discussion, conclusion and recommendation for further research.

The objective of this study was to identify the factors influence functional drinks consumption behavior among Bangkok residents aged between 18 to 65 years. This was a cross sectional study. Structured questionnaire was used for face to face interview with 568 respondents.

All the data were analyzed and shown as descriptive result and analytical results. In descriptive findings, researcher intended to present all information that was collected in frequency, percentage as a whole together with comparing between consumption of functional drinks once in a life and never consumed.

5.1.1 Sociodemographic characteristics

In this study more than half (61.8%) of respondents were female and 38.2% were male which is consistent with 'The 2010 Population and Housing Census' of Thailand. As per census in September 2010 the proportion of female (4.27 million) was higher than male (4.03 million) in Bangkok. According to CIA (Central Intelligence Agency) World Fact book, May 4, 2017 the proportion of different aged population was 0-14 years: 17.18%, 15-24 years: 14.47%, 25-54 years: 46.5%, 55-64 years: 11.64%, 65 years and over: 10.21% (2016 est.) in Thailand. The study outcome was also consistent with CIA. It has been observed that about half of the respondents (47.50%) were i.e. age was between 18 to 33 years. Among the study population about three-fifths (58.6%) were single. It is interesting to observe that service holders (government or private service) comprises 56% (36.4% & 26.9%) of the total respondents. It is encouraging that highest proportion (42.1%) of respondents in the sample were bachelor degree holder. In this study the respondents with monthly income between 10,001 to 30,000 baht (53.2%) were over represented. This was consistent with

the study of the National Statistical office that in 2015 in central Bangkok the total monthly income per household was 41,002 baht.

5.1.2 Life Style characteristics

It is quite interesting to observe that more than half of the respondents were moderately (58.6%) and only about one fourth (21.5%) of the respondents were ‘a lot concern’ about health. Interest about the functional drink is one of the important factors to assess the functional drink consumption behavior. Table 2 shows that 49.3 were moderately interested and only 8.8% were not interested a lot. More than half of respondents (54.9%) reported house work as their leisure activity. Whereas only 8.3% mentioned outdoor exercise leisure activity respectively. Majority of the respondents agreed (56.9%) that they daily face stress in moderate level and 23.1% face little stress in their daily life.

5.1.3 Consumer Behaviour about consumption of functional drinks

The study revealed that 88.4 % of all respondents drank functional drinks at least once in their life. Three types of functional drinks have been taken into account in this study. These are fruit/vegetable juice, green tea/herbal drinks and beauty drinks. Herbal drinks are becoming popular especially among health-conscious. Among respondents who consumed functional drinks once in a life, 96.2% respondents reported that they had consumed fruit/ vegetable juice and 95% consumed green tea/herbal drink once in a life. This might be because the market of tea is coming to compete with the fruit juice market in health conscious market (Bundechanan & Fongsuwan, 2014). In contrast only 61% consumed beauty drinks once in a life. About 31% respondents usually consumed fruit/vegetables juice and 33.8% consumed green tea/herbal drinks 2-3 times per week, whereas in case of beauty drink it was only 21.5%. A higher percentage (40.6%) of respondents reported that they usually consumed beauty drink less than once in a month.

Among the respondents who consumed functional drinks once in a life, about half (46.8%) of mentioned “for better health” as the reason of drinking functional drinks. 12.9% mentioned media/advertisement as the reason of drinking. (M. Niva & Mäkelä, 2007) revealed in a study that consumers in developed countries make purchase decision based on health reasons, are interested in healthy foods, and / or believe that

foods can have health-promoting features. Majority of the respondents (49%) reported “drink when felt tired” as their time of drink. 84.3% respondents mentioned the convenience stores as their preferred places from where they used to buy the functional drinks. This could be the reason of wherever one stays in Bangkok convenience stores are within walking distance from the residence. In this study the Bangkok residents mentioned television as the most convenience source of information (89.6%). Next major sources of information were media online and advertisement board with 41.7% and 38.4% respectively and the least convenience source was Instagram (5.3%). Whereas, (N. Urala & Lähteenmäki, 2004a) reported that scientists and documentaries were chosen as the most reliable source of information.

The respondents were asked to give their opinion about the different product related factors that motivate to consume functional drinks. About fifty-one percent of the respondents were of the opinion of ‘Important’ for ‘new product’ and famous producing company’. It is noted that in the case of ‘FDA certification’ majority i.e. 63.6% respondents said that it is “very important” motivational factor for functional drinks consumption behaviour. (N. Urala, Arvola, & Lähteenmäki, 2003) reported in a study that respondents displayed more trust in authorities than food manufacturer. 54.6% and 54% said that the consumption of functional drinks motivated by ‘detail of nutrition label’ and ingredients of drinks’ respectively. Consumer studies have demonstrated that the presence of health claims on functional food labels results in more favourable attitudes towards functional foods and has a positive influence on consumers’ perceived healthiness of functional foods (Vella, Stratton, Sheeshka, & Duncan, 2014). The opinion about ‘price’ was also mention as ‘Important’ by 55.8% respondents.

The respondents were also asked to give their opinion about some other different factors that motivate to consume functional drinks. For the factor ‘majority of people drinks’, about two-fifths of respondents’ opinion were of ‘not important’ and ‘important’ in each cases. Whereas only 10.7% mentioned it as a ‘very important’ factor. Interestingly 44.4% said social media was ‘not important’ and only 36.3% mentioned social media was an ‘important’ motivational factor in consumption of functional drinks. Majority of people (62.3%) agreed that ‘interesting advertisements’ factor played ‘very important’ role in consumption of functional drinks. About half of the respondents

(49.1%) were of the opinion 'important' for factor 'to take care health' in consumption of functional drinks. However, 'to release stress' (52.8%) and 'to help digestion' (52.6%) was also an 'important' motivational factor to consume functional drinks.

5.1.4 Association of functional drinks consumption with socio demographic characteristics of respondents

For inferential analysis, Chi square test was conducted to investigate the overall association of product related features with functional drink consumption behavior.

There was no association between gender and consumption of functional drinks (p-value=0.63).

This study indicated that the percentage was higher among female (62.2%) than male (37.8%) who ever consumed functional drinks in their life. Many literatures showed that female consumers are promising target group for functional foods than males because they display more interest in healthy food consumption and health in general (Bogue & Ryan, 2000; N. Urala & Lähteenmäki, 2004b).

Age of the respondents had no association with the consumption of functional drink (p-value=0.736). However, the mean age for respondents who ever consumed functional drink was 36.31 (\pm 11.58). (Lau, Chan, Tan, & Kwek, 2012b) also stated that an increasing trend towards consumption of processed foods is seen among young consumer group age below 40 years who seek convenience.

Occupation was also not associated with consumption of functional drinks (p-value=0.286). among the respondents who ever consumed functional drinks, 63.9% were private or government service holder. The percentage was also highest in case of who never consumed functional drink and service holder (59.1%).

Respondents education was not statistically significant (p-value 0.276) and associated with the functional drinks consumption in this study. It was observed that 43.60% were bachelor degree holders among the respondents who ever consumed functional drinks comparing to 30.3% bachelor degree holders who never consumed functional drinks. According to (De Jong, Ocke, Branderhorst, & Friele, 2003; N. Urala, 2005) generally functional foods users are often more educated. In contrast, it was found that consumers

with the least education were more concerned and demanded stricter regulation on functional foods than those of higher education (M. Niva & Mäkelä, 2007).

The association was not statistically significant (p value=0.380) with the monthly income of respondents. It has been observed that among who ever consumed functional drink, 6.8% respondents' income was more than 50,001 baht/month comparing to only 3% among who never consumed and their monthly income was more than 50,001. Among the respondent who never consumed, 12.1% respondents' income was less than 5000baht/month which was higher than ever consumed (9.4%) and monthly income was less than 5000 baht. As per this study, the consumption of functional drinks was higher among respondents having higher monthly income. Level of income may also play a role in functional food consumption, some studies show that consumption of functional foods is associated with lower income households (Herath, Cranfield, & Henson, 2008). (Hilliam, 1996) posited that purchasing of functional foods in Europe is biased towards the higher socio-economic groups, reflecting a higher willingness or ability to pay a price premium, as well as better knowledge and higher awareness.

5.1.5 Association of functional drinks consumption with life style characteristics of respondents

To find out the association between life style characteristics and consumption of functional drink chi-square test was conducted. A significant association was found between health concern level and consumption of functional drinks (p -value=0.009). In this case, 60% respondents were moderately concern among who consumed functional drinks once in a life whereas about half (48.5%) of the respondents were moderately concern among respondents who never consumed. The percentage of 'does not concern about health' was higher among never consumed (6%) than ever consumed (1.2%) functional drinks. According to (Landström et al., 2009) significant predictors of functional food consumption are related to consumers' health motivation.

Despite the overwhelming interest in and increasing consumption of functional foods, very little is known about how consumers perceive these products (Herath et al., 2008). In this study, the respondents' interest about the functional drinks was statistically significant (p -value=0.000). Most of the respondents (51.2%) were moderately interested about functional drinks among who consumed ever whereas moderately

interested was only 34.8% among never consumed. Among the respondents who never consumed the highest proportion was 'little interested' (40.9%) about the functional drinks comparing to only 30.7% among ever consumed.

The association of leisure activity and consumption of functional drinks was not statistically significant (p -value=0.970). however, it was noted that most of the respondents' leisure activity was housework for both cases i.e. among ever consumed (54.8%) and never consumed (56.1%) functional drinks. 8.6% respondents' leisure activity was outdoor exercise among ever consumed functional drinks comparing to only 6.1% of respondents' (never consumed functional drinks) mentioned outdoor exercise as their leisure activity. The outcome indicates that households work was most common leisure activity among respondents' and outdoor exercise was mentioned by a very small proportion. But exercising outdoor helps to improve energy level and decrease stress to a greater extent than working out inside.

Respondents daily life facing stress or not is an important factor to assess the functional drinks consumption behavior. But in this study there was no significance association (p vale 0.075) between daily life facing stress and consumption of functional drinks.

Among the respondents who ever consumed functional drinks 18.70% said that they used to face 'a lot of stress' comparing to only 7.6% among who never consumed functional drinks in their daily life. The percentage for 'moderately' facing stress in daily life was quite similar for among ever consumed (56.8%) and never consumed (57.6%) respondents.

5.1.6 Product related motivational factors and consumption of functional drinks by respondents

There was no statistically significant (p value=0.996) association between the factor 'new product' of functional drinks and ever consumption of functional drink The mean opinions score about the 'new product' who consumed functional drinks once in a life and never consumed was same 2.61. Type of health-related information and the degree of trust in this information play an important role in acceptance of functional foods (Krystallis, Maglaras, & Mamalis, 2008).

Concerning the factor 'producing company famous' the mean opinion scores were 2.82 (SD± 0.78) and 2.85 (SD± 0.81) for who consumed functional drinks once in a life and never consumed respectively. And there was no significant association between new product and consumption of functional drinks (p-value=0.801). The result was consistent with other study that the consumers' least trustworthy was manufacturers claims (N. Urala & Lähteenmäki, 2004b). In case of association of 'beautiful & outstanding packaging' with consumption of functional drinks no statistically significant result was found (p value=0.352). the mean opinion score for who consumed and among who never consumed was low (mean score 2.7)..

The factors 'certified by Food and Drug Administration (FDA)' and 'providing academic research/certificate' were not significantly associated with the consumption of functional drinks. Though, the mean opinion scores for FDA were 3.61 (SD±0.54) and 3.62 (SD±0.60) among ever consumed and never consumed respectively. And the mean opinion scores for 'providing academic research/certificate' were 3.33 (SD± 0.60) and 3.33 (SD± 0.69) for among who consumed functional drinks once in a life and never consumed respectively.

According to a study the nutrition and health information, and the source of this information, has the potential to influence acceptance of functional food products by communicating the health benefits of such products (N. Urala et al., 2003). However, in this study statistically significant difference was not achieved between factor 'detail of nutrition label' and consumption of functional drinks (p-value= 0.675). But mean opinion score was higher among never consumed (3.53) functional drinks than ever consumed (3.50).

The attitude regarding the 'ingredients of drinks' was significantly associated (p value=0.007) with the consumption of functional drinks The mean opinion score for this factor was higher (3.39, SD±0.58) among ever consumed respondents than for who never consumed (3.17, SD±0.62).

In this study 'benefit of drinks' was not significantly associated (p value=0.979) with consumption of functional drinks. This finding was conflicted with the previous studies. According to (H. Tuorila & A. V. Cardello, 2002) information on health benefits of a food can increase the likelihood of its consumption. Consumers' knowledge also significantly influences the confidence in functional foods and eventually buying the

product (Krystallis et al., 2008). Attitudes towards functional foods have been widely researched. It is found that belief in health effects or perceived benefits of functional foods is most crucial factor to purchase intention (Verbeke, 2005). Concerning about the factor ‘price’, there was no statistically significant association ($p= 0.823$) with consumption of functional drinks. But price cannot be excluded from the factors influencing the willingness to consume foods. Price plays a crucial role is the decision of Finnish consumers to purchase functional foods (N. Urala, 2005).

Above all, the ‘total score of product related factors’ was also not significantly associated ($p=0.884$) with the consumption of functional drinks.

5.1.7 Other motivational factors and consumption of functional drinks by respondents

The respondents’ attitude about the factor ‘majority of people drink’ was not significantly associated (p value= 0.474) with the ever consumption of functional drinks. Though the mean opinion score was higher among who consumed functional drinks once in a life (2.58) than among who never consumed (2.27). It could be the reason that the respondents were motivated by the popularity of functional drinks.

There was no significant association (p -value=0.755) between the motivational factor ‘family/friends introduced’ and ever consumption of functional drinks. The mean opinion scores were quite same among ever consumed (2.65) and never consumed (2.68) functional drinks.

Statistically significant association was not found (p -value= 0.383) between respondents’ attitude towards ‘social media’ and consumption of functional drinks.

There was no significant difference between attitude regarding ‘interesting advertisement’ and ever consumption of functional drinks (p -value=0.544). There was not much difference between the mean opinion scores, those were 2.84 ($SD\pm 0.70$) and 2.79 ($SD\pm 0.83$) for who consumed functional drinks once in a life and never consumed respectively.

The mean opinion score for the factor ‘to take care health’ were 3.37 ($SD\pm 0.66$) and 3.21 ($SD\pm 0.62$) among who consumed functional drinks once in a life and never consumed respectively. And there was no statistically significant difference (p -value= 0.059).

For the factor 'to release stress' mean opinion scores were 3.21 (SD± 0.72) and 3.11 (SD± 0.70) for who consumed functional drinks once in a life and never consumed respectively. No significant association was achieved between 'to release stress' and consumption of functional drinks (p-value=0.256).

'Drink to help digestion system' factor was not significantly associated with the consumption of functional drinks. There was no difference between the mean opinion scores of ever consumption of functional drinks and never consumption of functional drinks. For both cases mean opinion score was 3.00 (three).

There was no significant difference between attitude regarding the factor 'to control weight' and consumption of functional drinks (p-value=0.651). There was also not much difference between the mean opinion scores, those were 3.00 (SD± 0.81) and 3.05 (SD± 0.73) for who consumed functional drinks once in a life and never consumed respectively.

The mean opinion score for the 'total score of product related factors' were 29.60 (SD± 4.85) and 29.42 (SD± 5.20) for who consumed functional drinks once in a life and never consumed respectively. And no significant difference was achieved (p-value=0.780).

5.2 Conclusions

In this study majority of the respondents were female (61.8%). About half (47.5%) of the respondents age was between 18 to 33 years and only 17.6 percent were between age 50 to 65 years. Regarding respondent's education level, 42.1% said that they had bachelor degree, 19.4% had Master's degree, and 12.9% had vocational/ diploma. The majority (53.2%) had monthly income of between 10,001-30,000 baht and only 0.7 % had income more than 100,000 baht/month.

Majority (58.6%) of the respondents 'were moderately concern about health in this study. About half of the respondents' (49.3%) were moderately interested about functional drinks whereas only 8.8% were not interested. 54.9% reported house work as their leisure activity. Whereas only 8.3% mentioned outdoor exercise as their leisure activity respectively. Majority of the respondents (56.9%) daily face stress in moderate level and only 2.6% mentioned that they do not face any stress in daily life.

It has been observed in this study that majority of respondents (88.4%) had consumed functional drinks at least once in a life. There were three types of functional drinks studied in this study fruit/vegetable juice, green tea/herbal drink and beauty drinks. Among respondents who ever consumed any type of functional drinks, fruit/vegetable juice was consumed by 96.2% respondents at least once in a life, the percentage for green tea/herbal was 95%, whereas only 61.0% respondents had ever drunk beauty drinks.

In case of frequency of consumption of functional drinks, the percentage of consumption for 2-3 times/per week is quite similar for both fruit/ vegetable and green tea/herbal drinks which are 31.0% and 33.8% respectively. But for beauty drink the percentage for 2-3 times/week consumption is only 21.5%. It is noted that 40.6% respondents consumed beauty drinks less than once in a month, but for fruit /vegetables juice and green tea/herbal only 24.6% and 19.7% consumed less than once in a month respectively.

As a reason to choose any kind of functional drinks 46.8% of the respondents mentioned “for better health”. 12.9% mentioned media/advertisements influence as the reason of drinking. Majority of the respondents (49.0%) reported “drink when felt tired” as their time of drink any kind of functional drinks.

Regarding the buying place, in case of convenience store 84.3% of respondents agreed that they usually buy therefrom. Only 4.2% and 2.6% respondents said that they bought from drug store and beauty center respectively. Majority of the respondents (89.6%) stated that they learned about the functional drinks from television, next major sources of information were media online and advertisement board with 41.7% and 38.4% respectively.

Among different product related motivational factors in consuming functional drinks, regarding the certified by Food and Drug Authority (FDA) 63.6% respondents said ‘Very important’ and only 0.2% said ‘not very important’. In case of factors ‘details of nutrition labels’ and ‘benefit of drinks’ about 54% of respondents’ of the opinion was in favour of ‘very important’ in each cases. ‘Providing academic research or certification’ it was marked as ‘important’ factor by 53.9% respondents.

Apart from the product related motivational factors some other factors have also been considered by this study which motivates to consume functional drinks. Regarding the

factor 'majority of people drink', 43.7% of the opinion was for 'important', only 6.3% was for 'not very important'. In case of factor 'interesting advertisement' 62.3% respondents' of the opinion was for 'important' and only 5.3% was for 'not very important'. 44.4% of the opinion was for 'not important' for social media as a motivational factor comparing to only 9.9% of the opinion for 'very important'. For motivational 'to release stress' 52.8% of the opinion was for 'important' and only 2.8% was for 'not very important'. In case of 'to take care health' 49.1% of the opinion for 'important' comparing to only 1.4% was for 'not very important'.

For the study population, ever consumption of functional drinks had no association with several demographic characteristics which are gender, age, marital status, occupation, education and monthly income.

There was a statistically significant association between ever consumption of functional drinks and health concern level. But for the rest of the life style factors where interest about functional drink, leisure activity and daily life facing stress were not significantly associated with the ever consumption of functional drinks.

There was a statistically significant association between ever consumption of functional drinks and ingredients of drinks. The mean opinion scores for ingredients of drinks was higher (3.40) among respondents who consumed functional drinks once in a life than who never consumed (3.16). For benefit of drinks the mean opinion scores were equal (3.50) among consumed functional drinks once in a life and never consumed and the mean opinion scores was also for equal for providing (3.33) among kinds of respondents. For product related motivational factors, new product, producing company famous, beautiful and outstanding packaging, FDA, detail of nutrition label, providing academic research certificate, ingredients of drinks, benefit of drinks and price had no association with ever consumption of functional drinks. The total score of product related factors was 28.71 among who consumed functional drinks once in a life and it was 28.65 among never consumed functional drinks.

Among 'other motivational factors', majority of people drink, family/friend introduce, social media motivated, interesting advertisements, to take care health, to make skin white, to take care brain, to release stress, to help digestion and to control weight had no association with ever consumption of functional drinks. The mean opinion score for

factor majority of people drink was higher among who consumed (2.58) functional drinks once in a life than among never consumed (2.27). The mean opinion score for interesting advertisement was higher (2.84) among who consumed functional drink once than among who never consumed (2.79). The mean opinion scores were higher among who consumed functional drink once in a life than among who never consumed for the factors to take care health, to take care brain, to release stress and to help digestion. The total mean score of other motivational factors was 29.60 among who consumed functional drinks once in a life and it was 29.42 among never consumed functional drinks.

5.3 Limitations

The survey of the study was conducted by convenience sampling. Although there are many benefits of convenience sampling, there are some limitations as well.

Possibility of being biased:

In this study the data collected by convenience sampling represented views of 18 to 65 years old peoples of Bangkok not the entire population of Thailand. i.e. we did not cover all possible age groups. We also did not take into consideration the people from other cities. Thus, our findings do not represent the entire population.

Possibility of a sampling error:

Since the selection itself is biased, inaccuracies are bound to creep in i.e, sampling error might had been occurred.

Results cannot be generalized:

For the above reasons, the conclusions drawn from this research cannot be generalized and said that this is what applies to all the people in Thailand. The trend of functional drinks consumption can be identified, but the rules or laws cannot be formulated. The statement about functional drinks consumption behavior can also not be made as they are not the representatives of the entire population of Thailand.

Language barrier:

Since the researcher is a foreigner and does not know the Thai language, communication with the respondents will be difficult. Therefore, the researcher had to depend on the research assistants.

5.4 Recommendations

In this study the consumption of functional drinks was common among majority of the study population. It has also been revealed that most of respondents learned about the functional drinks from television. Therefore, television channels could be the effective way for raising awareness about added sugars in functional drinks, increasing knowledge about health problems associated with excessive sugar consumption. This study showed that majority of the respondents were not having physical activities or exercise and facing stress in their daily life. So, it is recommended that awareness of the need to focus on the essential role of both diet and physical activity as key determinants of health and reduced risk of chronic disease that may have from over consumption of functional drinks. The scope of future research should be broadened to include a larger representative sample size and sample area. Moreover, it would be useful to study further separately each group of consumer who uses functional drinks for different purposes.

5.5 Expected benefit and application

The results will be helpful for public health expertise to plan programs in the future to prevent the consequences of an emerging public health problem due to over consumption of different kinds of functional drinks. This information should be useful in developing health education intervention programs that will focus on the side effects of functional drinks on the youth especially college students.

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REFERENCES



APPENDIX



AF 02-12



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 Tel/Fax: 0-2218-3202 E-mail: eccu@chula.ac.th

COA No. 116/2017

Certificate of Approval

Study Title No. 055.1/60 : FACTORS ASSOCIATED WITH THE FUNCTIONAL DRINK CONSUMPTION BEHAVIORS OF BANGKOK RESIDENTS, THAILAND

Principal Investigator : FAHMIDA SULTANA

Place of Proposed Study/Institution : College of Public Health Sciences,
Chulalongkorn University

The Research Ethics Review Committee for Research Involving Human Research Participants, Health Sciences Group, Chulalongkorn University, Thailand, has approved constituted in accordance with the International Conference on Harmonization – Good Clinical Practice (ICH-GCP).

Signature: Prida Tasanapradit Signature: Nuntaree Chaichanawongsaroj
 (Associate Professor Prida Tasanapradit, M.D.) (Assistant Professor Nuntaree Chaichanawongsaroj, Ph.D.)
 Chairman Secretary

Date of Approval : 30 May 2017

Approval Expire date : 29 May 2018

The approval documents including

- 1) Research proposal
- 2) Patient/Participant Information Sheet and Informed Consent Form
- 3) Researcher's Commitment Form
- 4) Questionnaire



Project No. 055.1/60
 Date of Approval: 30 MAY 2017
 Approval Expire Date: 29 MAY 2018

The approved investigator must comply with the following conditions:


1. The research/project activities must end on the approval expired date of the Research Ethics Review Committee for Research Involving Human Research Participants, Health Sciences Group, Chulalongkorn University (RECCU). In case the research/project is unable to complete within that date, the project extension can be applied one month prior to the RECCU approval expired date.
2. Strictly conduct the research/project activities as written in the proposal.
3. Using only the documents that bearing the RECCU's seal of approval with the subjects/volunteers (including subject information sheet, consent form, invitation letter for project/research participation (if available)).
4. Report to the RECCU for any serious adverse events within 5 working days.
5. Report to the RECCU for any change of the research/project activities prior to conduct the activities.
6. Final report (AF 03-12) and abstract is required for a one year (or less) research/project and report within 30 days after the completion of the research/project. For thesis, abstract is required and report within 30 days after the completion of the research/project.
7. Annual progress report is needed for a two-year (or more) research/project and submit the progress report before the expire date of certificate. After the completion of the research/project processes as No. 6.

AJ-04-07

ข้อมูลเข้าร่วมงานวิจัย


ชื่อโครงการ: วิจัยเพื่อพัฒนาระบบการบริการลูกค้าด้วยเทคโนโลยีสารสนเทศในประเทศไทย
 ชื่อผู้วิจัย: พานิดา คุณานาน / สันตนาถ นิตินนทนาถ
 สถานที่ติดต่อผู้วิจัย: วิทยาลัยวิทยาศาสตร์สาขาการแพทย์ จุฬาลงกรณ์มหาวิทยาลัย
 (ที่บ้าน): วิชชี คอร์ท (ห้อง 2A) 71 ซอยสุขุมวิท 15 ถนนสุขุมวิท กรุงเทพฯ 10110
 โทรศัพท์ (ที่ทำงาน): 02-2188193 / โทรศัพท์ (บ้าน): 026510367
 โทรศัพท์มือถือ: 087-9739762 / E-mail: (sanatana@gmail.com)

1. ขอเชิญท่านเข้าร่วมงานวิจัย โครงการบริการผ่านช่องทางไปรษณีย์และระบบสารสนเทศและความเข้าใจในงานวิจัย ว่างานวิจัยนี้เกี่ยวกับเทคโนโลยีที่เกี่ยวข้องกับอะไรก่อนที่ท่านจะตัดสินใจเข้าร่วมโครงการวิจัย หากต้องการสอบถามข้อมูลที่ไม่ชัดเจนเพิ่มเติม โปรดสอบถามผู้วิจัย
2. โครงการวิจัยนี้เป็นโครงการเชิงวิจัย เกี่ยวข้องกับเทคโนโลยีสารสนเทศและเครื่องมือที่ทันสมัยซึ่งเกี่ยวข้องกับคุณประโยชน์ในประเทศไทย
3. การคัดเลือกกลุ่มประชากรที่เข้าร่วมในการวิจัยครั้งนี้ เป็นคนไทยที่จบทยุทธศาสตร์ศึกษา จำนวน 440 คน ที่อาศัยอยู่ในกรุงเทพฯ เป็นเวลาอย่างน้อย 3 เดือน มีช่วงอายุ 18 - 65 ปี ผู้ตอบแบบสอบถามจะต้องมีคุณสมบัติที่เข้าร่วมงานโครงการวิจัยในการวิจัยครั้งนี้ ผู้มีส่วนร่วมในการวิจัยที่ได้รับการเชิญทั้งหมดคือเป็นผู้ที่สะดวกในการสื่อสารที่และสามารถตอบคำถาม อ่านเขียน และ พูด ภาษาไทย ได้ และ ไม่ใช่นักศึกษาระดับปริญญาตรีที่ทำงานในบริษัทหรือองค์กร ผู้วิจัยจะเลือกผู้ตอบแบบสอบถามจากพื้นที่สาธารณะเช่น ห้างสรรพสินค้า ด้วยความช่วยเหลือของผู้ช่วยวิจัย
4. ได้เข้าร่วมโครงการวิจัยกรอกแบบสอบถามด้วยตนเอง ผู้ช่วยวิจัยจะอธิบายคำถามที่ถามในระหว่างที่ดำเนินการตรวจสอบแบบสอบถาม โดยใช้เวลาเฉลี่ยในการตอบแบบสอบถามประมาณ 15-20 นาที โดยแบบสอบถามแบ่งออกเป็น 3 ส่วน คือ ส่วนที่ 1 ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม จำนวน 10 ข้อ ส่วนที่ 2 พฤติกรรมการบริโภคเครื่องดื่มเสริมจำนวน 7 ข้อ และส่วนที่ 3 แรงจูงใจในการเลือกซื้อเครื่องดื่มเสริมจำนวน 14 ข้อ รวมทั้งหมด 31 ข้อ ซึ่งข้อมูลที่ได้จากการตอบแบบสอบถามจะถูกปกปิดเป็นความลับ และเปิดเผยข้อมูลโดยรวมเท่านั้น
5. นักวิจัยหรือผู้ช่วยวิจัยจะแนะนำโครงการวิจัย โดยแจ้งว่าการศึกษานี้เป็นการดำเนินการในนามของวิทยาลัยวิทยาศาสตร์สาขาการแพทย์ จุฬาลงกรณ์มหาวิทยาลัย หากผู้สนใจในงานวิจัยที่ไม่สามารถอ่านออกเขียนได้ ผู้ช่วยวิจัยจะอธิบายเกี่ยวกับหัวข้อที่ใช้ในการศึกษาวิจัยครั้งนี้ และแจ้งว่ามีผู้ช่วยร่วมการศึกษาในครั้งนี้เป็นการกรอกแบบสอบถามด้วยตนเอง และหากผู้สนใจไม่ได้ติดต่อมาไทย ผู้ช่วยวิจัยจะแจ้งว่างานวิจัยนี้ดำเนินการเฉพาะในคนไทย
6. ท่านจะได้รับเอกสารที่เกี่ยวข้องกับข้อมูลเรื่องเพิ่มพูนขึ้น
7. การศึกษาวิจัยในครั้งนี้ไม่มีความเสี่ยง / อันตรายในขั้นตอนการทำวิจัย แต่อาจจะใช้เวลานานในการกรอกแบบสอบถาม
8. ผลที่ได้จากงานวิจัยครั้งนี้จะเป็นประโยชน์ทางด้านวิชาการเชิงสาธารณสุขที่เกี่ยวข้องกับสุขภาพของประชาชนจากกรณีโรคเครื่องดื่ม และเพื่อป้องกันผลกระทบของปัญหาสุขภาพของประชาชนที่เกิดขึ้น
9. การมีส่วนร่วมในการศึกษาครั้งนี้เป็นไปด้วยความสมัครใจและผู้เข้าร่วมวิจัยที่ปฏิบัติตามขั้นตอนด้วยเอกสารการศึกษานี้ในเวลาที่สะดวก ไม่จำเป็นต้องให้เหตุผลใดๆ และจะไม่มีการตอบแทนสิ่งอื่น


 อาจารย์โครงการวิจัย: _____ 055.1/60
 ที่ได้รับรอง: _____ 30 พ.ค. 2563
 วิทยาสตราจารย์: _____ 29 พ.ค. 2563

AF 04-07

- 10. หากท่านมีข้อสงสัยให้สอบถามเพิ่มเติม ให้โดยสามารถติดต่อผู้จัดและผู้ร่วมจัด ได้ตลอดเวลา หากนักวิจัยมีข้อมูลใหม่ที่เกี่ยวข้องกับประเด็นใดก็ตามที่เกี่ยวกับความเสี่ยง / อันตรายต่อผู้เข้าร่วมฯ ให้รีบกรณแจ้งโดยเร็วที่สุดเท่าที่เป็นไปได้
- 11. ข้อมูลของผู้ร่วมวิจัยจะถูกเก็บเป็นความลับ หากมีการเสนอผลวิจัยจะเสนอกับคณะกรรมการข้อมูลโดยที่สามารถระบุถึงตัวตนได้จะไม่ปรากฏในรายงาน
- 12. ผู้เข้าร่วมวิจัยจะได้รับของที่ระลึกที่เข้าร่วมงานวิจัย คือ พวงกุญแจ ราคาประมาณ 20 บาท
- 13. หากนักวิจัยไม่ได้ดำเนินการปฏิบัติกับผู้เข้าร่วมตามที่ระบุไว้ในข้อมูลดังกล่าว ผู้เข้าร่วมสามารถร้องเรียนได้ที่ คณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์กลุ่มวิทยาศาสตร์สุขภาพจุฬาลงกรณ์มหาวิทยาลัย (RECCU) ถนนจุฬี : ชั้น 2 เลขที่ 254 ถนนพญาไท แขวงวังใหม่ เขตปทุมวัน กรุงเทพฯ 10330 ประเทศไทย โทรศัพท์ 0-2218-3202 E-mail: eccu@chula.ac.th


 ๐๖๕ ๙/๖๐
 วันที่รับทราบ..... ๓๐ มี.ค. ๒๕๖๑
 วันหมดอายุ..... ๒๙ มี.ค. ๒๕๖๑

AP05-07

หนังสือแสดงความยินยอมเข้าร่วมการวิจัย

ทำที่.....
วันที่.....เดือน.....พ.ศ.....

เลขที่ ประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย.....

ข้าพเจ้า ซึ่งได้นำนามท้ายหนังสือนี้ ขอแสดงความยินยอมเข้าร่วมโครงการวิจัย ชื่อ ปัจจัยที่เกี่ยวกับพฤติกรรมกรรมการบริโภคเครื่องดื่มที่ขึ้นของผู้ค้าในกรุงเทพมหานคร ประเทศไทย ชื่อผู้วิจัยหลัก ฟามิดา สุนธานา ที่อยู่ติดต่อ วิทยาลัยวิทยาศาสตร์สารสนเทศ จุฬาลงกรณ์มหาวิทยาลัย โทรศัพท์ 02-218-8193

ข้าพเจ้า ได้รับทราบรายละเอียดเกี่ยวกับที่มาและวัตถุประสงค์ในการทำวิจัย รายละเอียดขั้นตอนต่างๆ ที่จะต้องปฏิบัติหรือได้รับการปฏิบัติ ความเสี่ยงอันตราย และประโยชน์ซึ่งจะเกิดขึ้นจากการวิจัยเรื่องนี้ โดยได้อ่านรายละเอียดในเอกสารชี้แจงผู้เข้าร่วมการวิจัยโดยตลอด และได้รับคำอธิบายจากผู้วิจัย จนเข้าใจเป็นอย่างดีแล้ว

ข้าพเจ้าจึงสมัครใจเข้าร่วมในโครงการวิจัยนี้ ตามที่ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย โดยข้าพเจ้ายินยอมตอบแบบสอบถามเป็นเวลา 15- 20 นาที และยินดีเข้าร่วมโครงการด้วยการลงนามหนังสือแสดงความยินยอม

ข้าพเจ้ามีสิทธิถอนตัวออกจากการวิจัยเมื่อใดก็ได้ตามความประสงค์ โดยไม่ต้องแจ้งเหตุผล ซึ่งการถอนตัวออกจากการวิจัยนั้น จะไม่มีผลกระทบใดๆ ต่อข้าพเจ้าทั้งสิ้น

ข้าพเจ้าได้รับคำรับรองว่า ผู้วิจัยจะปฏิบัติต่อข้าพเจ้าตามข้อมูลที่ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย และข้อมูลใดๆ ที่เกี่ยวข้องกับข้าพเจ้า ผู้วิจัยจะเก็บรักษาเป็นความลับ โดยจะนำเสนอมูลการวิจัยเป็นภาพรวมเท่านั้น ไม่มีข้อมูลใดในการรายงานที่จะนำไปสู่การระบุตัวข้าพเจ้า

หากข้าพเจ้าไม่ได้รับการปฏิบัติตรงตามที่ได้ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย ข้าพเจ้าสามารถร้องเรียนได้ที่คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย 254 อาคารจามจุรี 1 ชั้น 2 ถนนพญาไท เขตปทุมวัน กรุงเทพฯ 10330 โทรศัพท์/โทรสาร 0-2218-3202 E-mail: eccu@chula.ac.th

ข้าพเจ้าได้ลงลายมือชื่อไว้เป็นสำคัญต่อหน้าพยาน ทั้งนี้ข้าพเจ้าได้รับสำเนาเอกสารชี้แจงผู้เข้าร่วมการวิจัย และสำเนาหนังสือแสดงความยินยอมไว้แล้ว

ลงชื่อ..... ลงชื่อ.....
(.....) (.....)
ผู้วิจัยหลัก ผู้มีส่วนร่วมในการวิจัย



เลขที่โครงการวิจัย..... 055 1/10 พยาน
รับสำเนาจาง..... ๒๐ พ.ศ. ๒๕๖๐
รักษาเอกสาร..... ๒๑ พ.ศ. ๒๕๖๑

แบบสอบถาม ความคิดเห็น และพฤติกรรมการบริโภคเครื่องดื่มฟังก์ชัน (Functional Drink)

วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย

แบบสอบถามนี้เป็นส่วนหนึ่งของการวิจัยและพัฒนาเพื่อศึกษาความคิดเห็นและพฤติกรรมการบริโภคเครื่องดื่ม โดยแบบสอบถามชุดนี้อาจออกเป็น 3 ส่วน ดังนี้ ส่วนที่ 1 ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม ส่วนที่ 2 พฤติกรรมการบริโภคเครื่องดื่มฟังก์ชัน ส่วนที่ 3 แรงจูงใจในการซื้อผลิตภัณฑ์เครื่องดื่มฟังก์ชันซึ่งแบ่งเป็นแรงจูงใจด้านผลิตภัณฑ์และแรงจูงใจอื่นๆ อนึ่งการตอบแบบสอบถามครั้งนี้เป็นการให้ข้อมูลตามความสมัครใจของผู้ตอบ และจะรายงานผลการศึกษาในเชิงภาพรวม ไม่มีการรายงานผลการศึกษานับเชิงบุคคล รวมถึงจะไม่มีการระบุชื่อใดๆ ต่อผู้ตอบแบบสอบถามทั้งสิ้น

คำชี้แจง : ทำเครื่องหมาย ตามความคิดเห็นหรือข้อมูลจริงของท่าน

ส่วนที่ 1 ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม

- 1. เพศ (1) ชาย (2) หญิง
- 2. อายุปี
- 3. สถานภาพสมรส (1) โสด (2) สมรส (3) หย่าร้าง
- 4. อาชีพ (1) นักเรียน/นักศึกษา (2) พนักงานบริษัท (3) รับราชการ/รัฐวิสาหกิจ
 (4) แม่บ้าน (5) ค้าขาย/ธุรกิจส่วนตัว (6) ว่างงาน
 (7) อื่นๆ ระบุ.....
- 5. ระดับการศึกษา (1) ประถมหรือต่ำกว่า (2) มัธยมศึกษา (3) ปวช. / ปวส.
 (4)ปริญญาตรี (5)ปริญญาโท (6)ปริญญาเอก หรือสูงกว่า
- 6. รายได้เฉลี่ยต่อเดือน (บาท) (1) < 5,000 (2) 5,001 – 10,000 (3) 10,001 – 50,000
 (4) 50,001 – 100,000 (5) 100,000 - 500,000 (6) 500,000 บาทขึ้นไป
- 7. คุณใส่ใจสุขภาพมากน้อยเพียงใด (1) ไม่เลย (2) เล็กน้อย
 (3) ปานกลาง (4) มาก
- 8. คุณสนใจเครื่องดื่มฟังก์ชันมานาน้อยเพียงใด
 (1) ไม่เลย
 (2) เล็กน้อย (ไม่คุ้นเคยกับเครื่องดื่มฟังก์ชันและไม่มีควมสำคัญในชีวิต)
 (3) ปานกลาง (คุ้นเคยกับเครื่องดื่มฟังก์ชันแต่ไม่มีความสำคัญในชีวิต)
 (4) มาก (คุ้นเคยกับเครื่องดื่มฟังก์ชันและมีความสำคัญในชีวิต)
- 9. กิจกรรมยามว่างส่วนใหญ่ ของท่าน (ในวันสุด หรือเวลาว่าง)
 (1) ทำกิจกรรม หรืองาน ในบ้าน (2) เล่นกีฬา/ ออกกำลังกายในร่ม (3) เล่นกีฬา/ออกกำลังกลางแจ้ง
 (4) ทายอาหารทานนอกบ้าน (5) ไปเที่ยวต่างจังหวัด (6) อื่นๆ
- 10. ชีวิตประจำวัน ของคุณ ต้องเผชิญกับความเครียด เหนื่อยล้า หรือไม่
 (1) ไม่เลย (2) เล็กน้อย (3) ปานกลาง (4) มาก



เลขที่โครงการวิจัย: 055-1/60
วันที่รับแจ้ง: 30 พ.ค. 2560
วันหมดอายุ: 29 พ.ค. 2561

ส่วนที่ 2 พฤติกรรมการบริโภคเครื่องดื่มฟังกซ์

1. คุณเคยบริโภคเครื่องดื่มฟังกซ์ในบรรจุภัณฑ์ (ขวด/ ถ้วย) หรือไม่

- (1) เคย (2) ไม่เคย

2. คุณบริโภคเครื่องดื่มฟังกซ์ในหน่วยบริโภคหรือไม่ และบ่อยแค่ไหน

	การบริโภค	ความถี่ในการบริโภค
1. เครื่องดื่มน้ำตาลไม่มี น้ำอัดลมพร้อมดื่ม (เช่น ฟูร่า มาลี ทิปโก้ ... เป็นต้น)	<input type="checkbox"/> (1) เคย <input type="checkbox"/> (2) ไม่เคย	<input type="checkbox"/> (1) ทุกวัน <input type="checkbox"/> (2) 2-3 ครั้งต่ออาทิตย์ <input type="checkbox"/> (3) อาทิตย์ละครั้ง <input type="checkbox"/> (4) เดือนละครั้ง <input type="checkbox"/> (5) น้อยกว่า 1 ครั้งต่อเดือน
2. เครื่องดื่มชาสมุนไพร (เช่น โยโยชิ อิชิตัน เป็นต้น ... เป็นต้น)	<input type="checkbox"/> (1) เคย <input type="checkbox"/> (2) ไม่เคย	<input type="checkbox"/> (1) ทุกวัน <input type="checkbox"/> (2) 2-3 ครั้งต่ออาทิตย์ <input type="checkbox"/> (3) อาทิตย์ละครั้ง <input type="checkbox"/> (4) เดือนละครั้ง <input type="checkbox"/> (5) น้อยกว่า 1 ครั้งต่อเดือน
3. เครื่องดื่มเพื่อความงาม ชนิดเข้มข้น (เช่น บิวตี้ดริงค์ (beauty drink) บริงค์ (Blink) หรือ เปปซิน ... เป็นต้น)	<input type="checkbox"/> (1) เคย <input type="checkbox"/> (2) ไม่เคย	<input type="checkbox"/> (1) ทุกวัน <input type="checkbox"/> (2) 2-3 ครั้งต่ออาทิตย์ <input type="checkbox"/> (3) อาทิตย์ละครั้ง <input type="checkbox"/> (4) เดือนละครั้ง <input type="checkbox"/> (5) น้อยกว่า 1 ครั้งต่อเดือน
4. เครื่องดื่มบำรุงสุขภาพ (เช่น ซูเปอร์โกลด์ แรเบอร์รี่ วิต้า เป็นต้น)	<input type="checkbox"/> (1) เคย <input type="checkbox"/> (2) ไม่เคย	<input type="checkbox"/> (1) ทุกวัน <input type="checkbox"/> (2) 2-3 ครั้งต่ออาทิตย์ <input type="checkbox"/> (3) อาทิตย์ละครั้ง <input type="checkbox"/> (4) เดือนละครั้ง <input type="checkbox"/> (5) น้อยกว่า 1 ครั้งต่อเดือน

3. คุณบริโภคเครื่องดื่มฟังกซ์เกินปริมาณที่กำหนด เพราะอะไร

- (1) เพื่อให้สุขภาพดีขึ้น (2) สื่อ/การโฆษณา (3) มีคนแนะนำ (4) ชื่นชอบรสชาติ (5) อื่นๆ(ระบุ).....

4. คุณใช้จ่ายในการซื้อเครื่องดื่มฟังกซ์ต่อครั้งเท่าไร(บาท)

- (1) น้อยกว่า 20 บาท (2) 20 - 29 บาท (3) 30 - 39 บาท
 (4) 40-49 บาท (5) เกิน 50 บาทขึ้นไป

5. คุณซื้อเครื่องดื่มฟังกซ์ที่ไหน (ตอบได้มากกว่า 1 ข้อ)

- (1) ร้านสะดวกซื้อ เช่น 7-11 (2) ห้างสรรพสินค้า / ซูเปอร์มาร์เก็ต, โกลด์, บิ๊กซี (3) ร้านขายของชำ
 (4) ร้านขายยา (5) ศูนย์ความงาม (6) อื่นๆ.....



ชื่อโครงการวิจัย 055-1/60
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วันหมดอายุ 29 มิ.ย. 2561

6. คุณบริโภคเครื่องเล่นฟังกันอะไรบ้าง

- (1) ดับคอนเซิร์ (2) ฟันท์วอร์ม้ออาหาร (3) ฟันท์วอร์ม้อกายอ่อนล้า (4) อื่นๆ.....

7. คุณรับข้อมูลหรือรู้จักเครื่องเล่นฟังกันผ่านสื่อโฆษณาอะไรบ้าง (ตอบได้มากกว่า 1 ข้อ)

- (1) ไม่เคยได้รับ (2) โทรทัศน์ (3) สื่อออนไลน์
 (4) หนังสือพิมพ์ (5) ป้ายโฆษณา (6) นิตยสาร (7) วิทยุ
 (8) โฆษณารมิตีอ (8.1) เฟสบุ๊ค (8.2) อินสตาแกรม (8.3) ยูทูป (8.4) ไลน์
 (8.5) อื่นๆ
 (9) อื่นๆ.....

ส่วนที่ 3 แรงจูงใจในการซื้อผลิตภัณฑ์เครื่องเล่นฟังกัน

ก) แรงจูงใจเกี่ยวกับผลิตภัณฑ์

	ไม่สำคัญมาก 1	ไม่สำคัญ 2	สำคัญ 3	สำคัญมาก 4
1.ผลิตภัณฑ์ใหม่				
2.บริษัทผู้ผลิตและจำหน่ายมีชื่อเสียง				
3.บรรจุก่อนท์สวยงาม โดดเด่น				
4.มีการรับรองจาก "อย." (สำนักงานคณะกรรมการอาหารและยา)				
5.มีฉลากโภชนาการบนถาดและเปลือก				
6.การให้ข้อมูลทางวิชาการ หรืองานวิจัยรับรอง				
7.ส่วนประกอบของเครื่องเล่น				
8.ประโยชน์ /สรรพคุณที่คาดว่าจะได้รับจากการดื่ม				
9. ราคา				



คณบดีคณะสาธารณสุขศาสตร์ มหาวิทยาลัยราชภัฏมหาสารคาม
 055 416
 วันที่รับรอง..... 30 พ.ค. 2560
 29 พ.ค. 2560
 วันหมดอายุ.....

b) แนวจุดใจด้านอื่นๆ

	ไม่พึงปรารถนา 1	ไม่สำคัญ 2	สำคัญ 3	สำคัญปรารถนา 4
1. คนส่วนใหญ่ตื่น				
2. ครอบครัว / เพื่อน นานาน่า				
3. โซเชียลมีเดีย เช่น เฟซบุ๊ก, อินสตาแกรม, ทูทส์, โลก, ไลน์ และอื่นๆ				
4. โฆษณาที่น่าสนใจ				
5. ประโยชน์ของเครื่องเขียน				
5.1 ป้ายรุ่นหัวพรรณ ทำไปให้วิศวกร กับคนคส				
5.2 ป้ายรุ่นมอง				
5.3 ผ่อนคลาย คลายเครียด				
5.4 ช่วยระบบย่อยอาหาร (ขับลม ขับถ่าย)				
5.5 ควบคุมน้ำหนัก ไม่อ้วน				



เลขที่โครงการวิจัย OSC 1/60
 วันที่รับรอง 30 มิ.ย. 2560
 วิทยมนอญ 29 มิ.ย. 2561

Appendix: Questionnaire

Factors Associated with the Functional Drink Consumption Behaviour of Bangkok Residents, Thailand

College of Public Health Sciences, Chulalongkorn University

This questionnaire is a part of the research and development to study the opinions and consumer behavior on functional drink of Bangkok residents (only Thai nationals), Thailand (Age 18-65 years). This questionnaire is divided into three parts. Part one is for the general information of the respondents. Part two is for the respondents' attitude/behaviour towards functional drink. Part three is for the factors motivate consumers in consuming functional drink, and this section has two subsections (a) product related factors and (b) other motivational factors. This survey is to provide the information on a voluntary basis of the respondents and to report the overall study. There is no report in studying resulted in person including any non-impact on the respondents.

Explanation: Please make according to your opinion/fact

Part 1 General information of respondent

1. Sex (1) male (2) female
2. Age ____ years
3. Marital Status (1) Single (2) Married (3) Divorced
4. Occupation (1) Student (2) Company employee (3) Government officer
 (4) House wife (5) Trading/personal business
 (6) Unemployed (7) others, Specify.....
5. Education (1) Primary(lower) (2) Secondary (3) Vocational/Diploma
 (4) Bachelor (5) Master (6) Doctor or higher
6. Average income per month(Baht)
 (1) < 3,000 (2) 3,001-10,000 (3) 10,001-30,000
 (4) 30,001-50,000 (5) 50,000-100,000 (6) 100,000 baht above
7. Health concern level
 (1) No (2) Little
 (3) Moderate (4) A lot
8. Interesting level on functional drink
 (1) No
 (2) Little (has less perception about the functional drinks and not necessary in daily life)
 (3) Moderate (familiar with functional drinks but not necessary in daily life)
 (4) A lot (familiar with functional drinks and necessary for the daily life)

9. Most leisure activity (holiday/leisure)

- (1) Activity/House work (2) Sport/indoor exercise (3) Sport/outdoor exercise
 (4) eating out (5) travel to other provinces (6) others

10. Is your daily life facing stress/fatigue or not?

- (1) No (2) Little (3) Moderate (4) A Lot

Part2 : Consumer behavior towards functional drink

1. Have you ever drunk functional drink in container(bottle/box) or not?

- (1) Yes (2) No

2. Have you ever drunk the following functional drink or not and how often

	Consumption	Frequency of consumption
1.Fruit juice, vegetable juice Example: Malet, Tipco	<input type="checkbox"/> (1) Yes <input type="checkbox"/> (2) No	<input type="checkbox"/> (1) everyday <input type="checkbox"/> (2) 2-3times/week <input type="checkbox"/> (3) once a week <input type="checkbox"/> (4) once a month <input type="checkbox"/> (5) less than once a month
2.Tea or herbal drink Example: Oishi, Yen yen	<input type="checkbox"/> (1) Yes <input type="checkbox"/> (2) No	<input type="checkbox"/> (1) everyday <input type="checkbox"/> (2) 2-3 times/week <input type="checkbox"/> (3) once a week <input type="checkbox"/> (4) once a month <input type="checkbox"/> (5) less than once a month
3.Strong beauty drink Example: Sappe (beauty collasikin/ beautyEyes)	<input type="checkbox"/> (1) Yes <input type="checkbox"/> (2) No	<input type="checkbox"/> (1) everyday <input type="checkbox"/> (2) 2-3 times/week <input type="checkbox"/> (3) once a week <input type="checkbox"/> (4) once a month <input type="checkbox"/> (5) less than once a month

3. Why do you choose to drink the above functional drink?

- (1) for better health (2) media/advertise (3) other advisers (4) favorite flavor
 (5) others(please specify).....

4. How much did you spend in buying functional drink each time?(Baht)

- (1) less than 20 baht (2) 20-29 baht (3) 30-39 baht
 (4) 40-49 baht (5) over 50 baht

5. Where did you buy functional drink?

- (1) convenience store such as 7-11 (2) department store/Supermarket: Lotus Big c
 (3) grocery store (4) drug store
 (5) beauty center (6) others, specify.....

6. When do you drink functional drink?

- (1) Drink in the morning (2) Drink with meal
 (3) Drink when body is weak (4) others, specify.....

7. Which type of advertising media do you receive the information about functional drink (can answer more than 1 answer)

- (1) never receive (2) T.V. (3) Media online (4) Newspapers
 (5) Advertisement board (6) Magazine (7) Radio (8) Social Media
 (8.1) Facebook (8.2) Instagram (8.3) Google (8.4) Line
 (9) others, specify.....

Part 3 Factors motivated to consume functional drink:

(a) Product related factors

	Not very important 1	Not important 2	Important 3	Very important 4
1. New Product				
2. Producing company famous				
3. Beautiful and outstanding packaging				
4. FDA (food and drug administration) certified				
5. Details of nutrition label				
6. Providing academic research or certification				
7. Ingredients of drink				
8. Usefulness or benefit of the drink				
9. Price				

3(b). Other motivational factors:

	Not very important 1	Not important 2	Important 3	Very important 4
1. Majority of people drink				
2. Family/friends introduce				
3. Social media such as Facebook, Instagram, google plus, line et.				
4. Interesting advertisement				
5. To take care health				
5.1 to make skin whitening and sun protection				
5.2 to take care brain				
5.3 to release stress				
5.4 to help digestion system				
5.5 to control weight				



Time Schedule

Acti-vities	Months								
	Nov-ember	Dece-mber	Jan-uary	Febr-uary	Ma-rch	Apr-il	M-ay	Ju-ne	July
Literature Review									
Writing Thesis Proposal									
Submission for Proposal Exam									
Proposal Exam									
Proposal Revision									
Ethical review									
Data Collection & Data Analysis									
Thesis and Article Writing									
Final Thesis Exam									
Submission of article for publication									
Submission of thesis									



BUDGET

Item	Quantity	Unit cost	Amount (Thai Baht)
Stationary	-	-	4000
Photocopy	2000	1	2000
Printing	1000	5	5000
Binding proposal	-	-	1000
Transport	-	-	2000
Souvenir for participants	400	20	8000
Remuneration for research assistant	5	1500	7500
Estimated Expense for completion process (documentation and thesis examination)	-	-	6500
Total			36000

VITA

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Gender: Female

Marital Status: Married

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1993: Bachelor of Science with Honours in Statistics from University of Dhaka, Bangladesh

Work Experience:

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